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RECENT ADVANCES IN PLASTIC SURGERY OF THE BONES *

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Plastic or reconstructive surgery has made many advances since its revival in the first half of the nineteenth century by Dieffenbach and his followers in Europe and Muetter and his contemporaries in America. These surgeons were probably preceded many centuries ago in plastic work, for the Egyptian papyrus named after Ebers and attributed to 1500 B. C. is said to mention rhinoplasty performed by flaps. The Hindu specialists made new noses from the frontal tissues before the time of Taliacotius in Italy. They replaced the cartilaginous portion, cut off as a punishment for adultery or for other reasons, by a cellular-cutaneous flap turned down from the forehead. Taliacotius in the sixteenth century made noses and lips from the tissues of the arm. He thus improved the features of European victims of nasal deformity, resulting from misfortune in war or by disease, many years before the time of Dieffenbach.

The history of the development of this branch of our art is as attractive as that of aviation. Both would easily evoke in one's mind a pleasure akin to that responding to the touch of a novelist's pen, had I the skill to mold phrases into the pleasing sentences of the trained essayist.

The modern surgeon was finally convinced that cutaneous flaps with pedicles, given new positions in the body, would live and become integral parts of the surrounding tissues. Doubt remained, however, as to the truthfulness of the occasional reports that sliced-off noses, ears or finger-tips had adhered and lived after being reapplied to the raw surfaces from which they had been severed.

Wolfe of Scotland, however, was able to convince a few ophthalmic and general surgeons that a free flap or graft of skin cut from a distant region could be successfully used to correct eversion of the eyelid. His method of dissecting up the ectropion, replacing the eyelid and filling the raw gap with a piece of detached skin was often tried; but the operation failed too frequently to become a standard procedure. It only occasionally happened that the graft lived, became united with the surrounding skin of the cheek or forehead and relieved the deformity. It remained for another Scot, Lord Lister, who has only recently died, to show that the failures in Wolfe's method usually occurred when the operator did not preclude septic contamination of the wound. It was Krause of the continent of Europe, however, who developed and increased the usefulness of the free flap, or graft, of Wolfe by utilizing it in general surgery and subjecting it to the safe surroundings of an aseptic technic.

During the last forty years thoughtful men of broad mental grasp have pondered on the facts that skin would survive when its blood-supply was cut off partially, as in pediculated flaps, or entirely, as in Wolfe grafts, and when planted in a new site would live. As a result, experimental research and clinical observation proved that other tissues are governed by physiologic laws similar to those regulating the cell life and cell death of skin.

Hence it is now known that teeth, tendon, blood-vessel, fascia, nerve, cartilage and bone may be shifted from one spot to another with comparative certainty of a preserved vitality. The essential is that septic infection be absent until the pediculated flap or the graft has time to become physiologically one with the surrounding living structures. Under some circumstances even a mild infection may be tolerated without causing entire failure of the plastic reparation. It is better to use the patient's own tissues for these operations than those of another person; and tissues of the young answer better than those of the aged. It is possible, however, to get success with tissues taken from another human being, from an amputated limb, or even from the body of a person who has recently died. Carrel has found that aseptic tissue preserved by cold storage may be successfully used for grafts weeks after removal from the parent body. It maintains its latent life for a long period. Under these circumstances, therefore, the employment of grafts from the lower animals, which do not answer as well for man as human grafts, has gradually been discontinued.

It apparently has been established that the cells of aseptic animal tissue may continue to grow even when detached entirely from the body. This is accomplished by placing small sheets or blocks of tissue in a suitable aseptic medium, which is contained in a sterile tube and subjected to a required temperature. Horticulturists will see the similarity of these physiologic facts with what they have long known and utilized in plant life.

Our interest to-day, however, is to be restricted to a discussion of the plastic surgery of bones. The preceding remarks were necessary as a preliminary to this discussion, because bone surgery and the surgery of the soft parts are in essence the same.

Bone is hard, to be sure, because of its inorganic constituents, which are required to give it the resistance and permanent shape that make the skeleton the protector of viscera, the framework on which organs and other structures hang and the levers through which efficient movements and locomotion are performed. The

* The Address in Surgery at the meeting of the Michigan State Medical Society, July 10, 1912.

lime salts, which give the desired contour and the necessary rigidity to bones, are extracted by a selective influence from the blood; but otherwise the vital processes of growth, repair and inflammation are similar to the same changes in soft tissues. Osteogenesis resides in the lower layer of the periosteum, the marrow and the soft structures within the haversian canals and lacunæ. The inorganic portion may be likened to a trellis or a filigree mold on which or in which the osteoblasts which create bone are supported and protected. To Ollier of Lyons should be given the greatest honor in the field of osteoplastic surgery, because it was his work and the stimulus which he gave to his immediate colleagues that established the possibility of using bone in plastic procedures. It is about thirty or forty years since Ollier first gave special attention to this branch of surgery. His interest continued until his comparatively recent death. The great development now seen in bone reparations is merely the march of progress found in all plastic operative work. The early methods of Ollier have been modified as a result of increasing knowledge; but his labors were those of an earnest, sincere, successful and far-seeing pioneer. He has had worthy followers in Tomita, Grohe, Morpurgo, Laewen, Murphy, Janeway, Albee, Hibbs, Axhausen and others in bone surgery.

When a piece of bone is transplanted, its raw surface should be placed and maintained in contact with living bone. This is said to make the probability of its living and growing much more certain than if such permanent contact is not secured. The actual contact of the two portions without the intervention of the fibrous periosteum may be kept up by nailing or suturing. This phase of the desired osteogenesis resembles the regenerative process in cerebrospinal nerves after suture, grafting or degeneration.

While the new osseous tissue is being deposited after bone grafting, the old bony tissue in the graft probably is being absorbed. Consequently, when the gap has been completely filled by new bone, as a result of what may be termed molecular deposit, the model or framework has really been removed by a molecular absorption. The latter process has gone on contemporaneously with the former. The result is a new model replacing the old but retaining the original contour.

Osteoplastic procedures are strategic and reconstructive. The former term describes those operations in which bone is displaced temporarily, in order that the surgeon may gain access to organs behind a bony wall or an obstructing barrier. When a rectangular section of the cranium is cut and turned outward on a musculocutaneous hinge, like a trap-door, to permit the removal of a subdural clot or a brain tumor, and is replaced after that task has been accomplished, a strategic osteoplastic operation has been performed. Such also are the temporary resections of the zygoma to permit excision of the sphenopalatine ganglion for neuralgia of the second division of the trifacial nerve, and of the squamous portion of the temporal bone to obtain access to the gasserian ganglion or the sensory root of the same cranial nerve.

Some nasopharyngeal tumors are removable only after temporary displacement of the halves of the hard palate or of the bones and cartilages of the nose. Suture of the pericardium and heart may demand for its proper and rapid performance a strategic trap-door displacement of the cartilages of several ribs, with perhaps some part of the ribs also. A temporary costal resection is needed to permit operation on the thoracic esophagus.

A similar displacement of the lamina of the vertebra is at times adopted as a step in the removal of a tumor of the spinal marrow or its membranes.

These operations are, as is readily seen, of the nature of the pedunculated flap method of using cutaneous tissue for the repair of deficiencies in the skin. They therefore were found to be practical aids in surgical interventions and were accordingly given a place in the technic of bone surgery earlier than the use of free bone flaps, or grafts, to remedy actual loss of bone.

The reconstructive plastic use of bone differs from the strategic in that the object of the operator is to repair or build again a bony region, which has had its efficiency lessened or destroyed by injury or disease. The most familiar illustration of this surgical activity is the treatment of fractures. Its application to open comminuted fractures is probably as old as surgery itself. It is likely that in the earliest ages a bone broken into several pieces and exposed to view had its fragments readjusted by the would-be curer of the injury in the manner suggested by experience as effectual in remodeling shattered pottery or a broken branch of a tree. It was seldom that success was obtained, for septic contamination, suppuration and necrosis were until late years the fate of open fractures. The axiom of treatment therefore prior to the antiseptic period was that fragments devoid of periosteum should be removed, and that those with adherent periosteum might be retained, though there was but small hope of preventing death of these pieces.

Success in combating septic infection of wounds soon led Lister to apply his methods to open fractures; and the osteoplastic cure of fractures was founded. Thus came the impulse which made bone-grafting a reasonably certain operation and has made possible almost incredible bony reparations.

An early step in this direction was the replacing of the disk of bone cut from the cranium after exploratory trephining. With what doubt many surgeons still in practice first dropped the button of bone into the hole made in the skull and sewed the scalp over it! How delightful it was to discover that in a few weeks the brain case was as solidly repaired as before perforation, instead of being left with a fibromembranous imperfection at the seat of operation! A succeeding step was replacing fragments after relieving depressions from comminuted fracture of the cranium. Later, when the surgeon needed to work behind bony impediments or wished to replace loss of bone so as to gain a requisite stability or rigidity, bone flaps and bone grafts were tried.

Probably the latest application of osteoplasty in brain operations is McArthur's successful attack on the hypophysis, as the pituitary body is now called, by a strategic osteoplasty of the frontal bone. He cuts out a section of that bone in the region of the eyebrow, including a part of the roof of the orbit, operates aseptically on the hypophysis and then replaces the bone. The patient subsequently shows only a slight scarring in the middle line of the forehead and within the eyebrow.

This epitome of the history of osteoplastic surgery brings us to a point where it is proper to mention illustrations of other conditions amenable to osteoplastic therapy.

Deformities of the nose due to congenital defects, injury or syphilitic necrosis may require rigidity in the tegumentary flaps used for the rhinoplasty. This can be given by pedunculated osteoplastic flaps cut from the

forehead, by cartilage or bone grafts taken from the ribs, or by bone grafts chiseled from the tibia. If this choice does not satisfy the operator, he may use a finger of the patient to make the new nose firm, or he may graft a toe on the patient's hand and then repair the nose by placing the hand against the face and inserting the transported toe into the nasal defect, where it will become attached in two weeks.

What shall be done for a deep ugly cicatricial furrow in the frontal region, caused by previous necrosis of the anterior wall of the frontal sinus? Open the skin with a sharp knife, set a properly shaped piece of the tibia in the frontal pit and sew up the skin. A smooth comely forehead with but a slight linear scar is the result. A similar procedure may be used to fill the depression left behind the ear by a complete mastoid extirpation. Suppose a surgeon is obliged to remove much of the upper jaw for tumor, and must excise the bony floor of the orbit. How will he give support to the eyeball? He may saw a piece of bone from the coronoid process of the lower jaw and, leaving some of the temporal muscle attached, twist the bone flap around under the eye, so as to act as a substitute for the orbital floor.

After removal of the ramus of the mandible for tumor or the loss of a portion of that bone from a gunshot wound, a new section of jaw may be obtained by transplanting a piece of tibia, rib or clavicle into the gap. If the clavicle is employed, it may be cut as an osseocutaneous flap with a pedicle. A piece of ivory of the proper length imbedded in the aseptic scar tissue may answer perhaps to hold the two portions of jaw in position; but living bone from the patient himself would be more likely to cause the formation of a new jaw.

Almost a miracle seems to have been accomplished by Esau, who operated on a patient with deficient prominence of the chin, due to temporomandibular ankylosis in childhood. First, he made new joints by the ordinary arthroplastic methods. Then he sawed the lower jaw into two halves at the symphysis. At the point of section he pulled the two halves apart and inserted 20 cm. of rib, abutting at each end against the sawed surfaces of the lower jaw. The piece of rib was fractured so as to bend at its middle to give the curved mental prominence. This bone graft restored the lower part of the woman's face to the normal shape in a fair degree.

The reference to ankylosis and its cure by arthroplasty in Esau's case brings to mind the restoration of the larger joints possible by osteoplastic methods. Surgeons now treat stiff knees, hips and elbows, resulting from fractures or osseous inflammations, by chiseling away the bony adhesions or irregularities and turning fibrofatty flaps in between the ends of the bones. Thus an almost normal mobility is secured and a much more stable joint made than by the former resection method.

Lexer in Europe and Vaughan in America have detailed cases showing that whole knee-joints may be taken from amputated limbs and placed between the sawn ends of the femur and tibia, after a total excision of the knee, with a fair prospect of obtaining a movable articulation. The hinge-joint from the limb of a person who has recently died is nailed or wired in position, and acts as a mold for the deposit of new bone derived from the blood by the action of the bone-forming cells in the living bone.

When a flail-like knee-joint is useless for locomotion, it may be made rigid by mortising the patella denuded of periosteum and turned on its edge into the joint like a dowel. This solidifies the joint and gives the stiff and firm synostosis desired.

Habitual dislocation of the patella may be prevented by stitching the detached tendon of the semitendinosus to a strip raised from the inner border of the patellar ligament.

The necrotic and infected bone in osteomyelitis, destroying the shaft of the tibia or radius, for example, may be removed by scraping, and a long graft, cut from the other tibia or a fibula, may be inserted between the two epiphyses. A new tibia will thus be formed. If the tibial shaft is lost by fracture or otherwise, the surgeon may utilize the fibula as a substitute. It will, if compelled to bear the weight of the patient in walking, become hypertrophied to bear the strain.

In a case of congenital absence of the shafts of both radii seen a couple of years ago, I have proposed to use the fibula to take the place of the radius. This could be done by using a piece of the fibula as a graft or taking a graft from the tibial crest. A fibular pediculated flap might be used instead of a graft.

In a few cases a finger has been supplied by grafting the great toe on the hand. Many fingers, as the result of accidental wounds in factories, are undoubtedly sacrificed by inexperienced operators, because of the non-use of plastic or osteoplastic methods in an effort to preserve portions of these digits.

One of the latest novelties in this line of surgery is making the posterior portion of the vertebral column rigid in tuberculous spondylitis by producing a continuous synostosis of the spines and lamina. This osteoplastic operation is better than supporting the bending spine with external gypsum jackets or spinal braces. Hibbs does this by fracturing the spinous processes in the diseased region at their bases and bending them downward to bridge the gaps between the successive vertebræ. Albee has accomplished a similar result by using strips from the tibia laid in grooves previously channeled down the back of the spinal column. This procedure resembles the inlaying of furniture.

Plastic methods have done a great deal to improve the results in fractures, as is well illustrated in the technic of fixation by screws, nails and plates. Recently Murphy has reported a case in which he nailed the aseptic head of the humerus into place after its removal in a bad fracture and made practically a graft of it. Murphy also tells of having reconstructed the hip-joint by cutting a section of the great trochanter off and nailing it in the position of the femoral head to act as an efficient substitute for that part of the articulation.

These various uses of bone flaps, bone grafts and bone substitutes are a rich development of the art of surgery. Pirogoff's osteoplastic amputation of the foot was a forerunner of these operations. The names already mentioned were worthy followers of that Russian surgeon.

Will man like a crab ever be able to reproduce on his body an entire limb? Perhaps so. Morgan thinks that man does not regenerate an arm or leg, as crabs and some vertebrates do, because his tissues regenerate with different degrees of rapidity. The bones, which are important in such complex reformations, generate very slowly, but the vessels, nerves, muscles and skin generate rapidly. There is, therefore, no tendency to synchronous reproduction of the lost limb. The lizard can reproduce a tail, but not legs. Morgan, who has studied these physiologic questions with care, has occasionally seen an imperfect foreleg in an adult frog.

May not the time come when the surgeon will regulate these processes in the same manner as the other human functions which gradually have come under control?

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OBSTETRICS IN GENERAL PRACTICE

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The demands made on the general practitioner in obstetrics to-day make it one of the most arduous, painstaking and sacrificial branches of the healing art.

At times the work requires patience, technical skill and poise of nerve that is seldom exceeded in any other department of medicine. This is not recognized or appreciated by the laity, partly because of the time-worn belief that child-bearing, including labor and the puerperium, are natural processes, and need but little and ordinary care to bring them to a successful termination. Most non-medical persons believe that the many unfortunate happenings and untoward results are inevitable, and cannot be forestalled or successfully coped when encountered.

The comparatively small remuneration of the present day for obstetric services has its foundation largely in the same prevalent notion, to which we, as a profession, only too often lend encouragement by rendering only such limited services as we make ourselves believe will suffice for the case in hand. We too often do not wish to put forth any more personal effort or time on the case than will justify an ordinary fee, frequently much to the detriment of the patient, and to the discredit of the physician and the profession. The patients who especially require the closest supervision from the practitioner are the primiparas, who must be watched from the very beginning, through pregnancy, labor and the puerperium. It is in these cases that departures from the normal must be recognized and treated, in order that the results may be as good as possible.

Emergencies such as hemorrhage, serious symptoms of toxemia, eclampsia, dystocia and others may be encountered under circumstances giving no opportunity for preparation to do aseptic surgical work, such as can be done in cases set for operation at some future definite time, with trained assistants and operating-room environments.

Sometimes this work must be done single-handed, under the most trying circumstances. This, coupled with the popular notion held by many, not only among the laity but among physicians and midwives as well, that "anything is good enough for a confinement case" in the way of supplies, accommodations and assistance is, in part, the reason why the mortality and morbidity in obstetrics in private practice has not improved materially in the last twenty years. A conservative observer[1] states that "6,000 women die annually in the United States from puerperal infection," that "7 per cent. of the deaths of women between 20 and 40 years of age are caused by puerperal infection," and that of "every 200 women who become pregnant, one dies." Think of the legion of women who survive with more or less permanent invalidism, as a result of going through the ordeals of pregnancy and confinement. Most of this invalidism dates back to the period of the primipara, to the "first confinement" as it is called, and whoever has had the care of this first confinement bears the greater part of the responsibility for the patient's woes, whether due to injury to the pelvic organs, to the pelvic outlet, to permanent kidney lesions, to edema of the lower limbs or to other after-effects more or less avoidable.

It seems beyond belief that such conditions prevail to-day and have existed during the very period in which so much has been accomplished in surgery, through the discoveries of Pasteur and the practical application of his discoveries by Lister in the development of asepsis and antisepsis. In obstetrics, asepsis is the ideal method to be followed in the management of a case. But antisepsis must be practiced as well, because in all labor cases we have to deal with a field immediately proximal to the birth-canal that cannot be sterilized and often cannot be kept clean all the time. The vaginal canal cannot be sterilized and commonly contains virulent bacteria, yet in spite of our modern possibilities of doing clean, good work, teachings are forgotten and the laws of asepsis ignored in the management of cases, with the unfortunate results just quoted, in spite of the fact that a maternity case is and should be managed as a strictly clean surgical case from the inception of labor until the completion of the puerperium.

Of utmost importance to the future welfare of a patient is the ability to make a proper diagnosis of position and presentation of the infant. An accurate knowledge of the relation of the size of the infant to that of the mother's pelvis and of the general conditions of both are prerequesite to the proper procedure in artificial delivery. Unskilful artificial delivery is a most potent cause of injury and death to the infant and lacerations of the maternal birth canal. Obstetric diagnosis is of far greater importance and far more worthy of serious study than would be inferred from the amount of attention given it by either the school, the hospital or the physician in general practice. Accurate diagnosis often requires patient study and a grouping together of all findings on examination, both internal and external, under anesthesia if necessary. If these requirements could be complied with, the damage done to infants and mothers would be greatly minimized. Although infant mortality is placed at 7.7 per cent., the rate would be much higher if all infant deaths from artificial delivery were reported. This unenviable condition of obstetrics in general practice can probably be best improved by sending every patient who presents one or more complications such as malpresentation or malposition, dystocia, placenta prævia, symptoms of toxemia, or nephritis, to a properly conducted maternity hospital, not as a last resort but in ample time. This can be done only when an early and correct diagnosis is made, early enough to permit the removal of the patient to the hospital. This means that our patients must be kept under observation, especially the primiparas. The common prejudice of the public against the hospital can be overcome by a concerted effort on the part of the profession to teach the people that, for good results, hospital care is as important in a certain class of obstetric cases as it is in most surgical cases. It would be an advantage if maternity hospitals were built and furnished to conform to the atmosphere of the home and could go by some other name. Such an institution must have all modern equipment necessary to do aseptic operative work. It must have graduate trained interns and nurses who have been trained in a good general hospital before taking up this special work. Such conditions would raise materially the standard of obstetric work. It would vastly increase the number of skilled men in this important, though much-neglected, field. It would mean a higher grade of obstetric work in general practice in obstetrics and would impress on every physician the fact that only the best kind of obstetric work would be acceptable to the public.

As it is practiced to-day, many physicians take obstetric engagements solely to retain the family practice; and as a result many do not appreciate the responsibility

1. De Lee: Obstetrics for Nurses, Ed. 3, 1911

assumed. Lack of knowledge brings with it a lack of apprehension or fear; therefore many are led to proceed with a case until some unforeseen condition or complication suddenly presents itself, demanding presence of mind, skill and technic far beyond that possessed by the average practitioner.

We have all met conditions that were trying in the extreme, and have found it necessary to do the best we could, sometimes single-handed. We have often looked back at some of our cases with considerable regret. Much of this self-reproach can be eliminated by better preliminary obstetric training, better compensation for good work, and access to good hospital facilities.

Dr. J. Whitridge Williams[2] of Johns Hopkins Hospital has said:

> After eighteen years' experience in teaching what is probably the best body of medical students ever collected in this country . . . I would unhesitatingly state that my own students are unfit on graduation to practice obstetrics in its broad sense, and are scarcely prepared to handle normal cases.

He incidentally mentions the lack of a wholesome equipment for the proper training of students in the practical work, and cites teachers of obstetrics in colleges who claim fewer than a hundred cases for their practical experience. It is evident that the cause of incompetent midwifery, with its concomitant train of infant and maternal mortality and morbidity is as much due to inadequate training at our schools and hospitals as it is to the carelessness and indifference of physicians and midwives. It is yet a question whether the midwife, with her dilatory and unscientific methods, is not better fitted to be trusted with the interests of the mother and child than a physician who is ever ready to apply forceps. If she would practice only cleanliness and watchful expectancy without meddling, I believe that the balance would be in her favor. This is especially true of one class of cases—the occipitoposterior positions, in which so much patience is required—since in most of them there will be anterior rotation if we will only wait long enough and can persuade the patient and relatives to wait and persevere. In such cases, especially in primiparas, the too early and improper application of the forceps causes injury to the mother and infant, which no surgical skill can entirely remedy. Practical bedside training of students and physicians in diagnosis and management of cases during pregnancy, labor and the puerperium will familiarize each one with abnormal conditions. To this end training in obstetric maneuvers should be given in small classes with frequent postgraduate rehearsals on the manikin.

My aim in making a report of obstetrics in my own private practice is to present a statistical review, as nearly accurate as possible, of a consecutive series of 1,116 cases, from January, 1896, to December, 1911. The cases are such as are encountered in general practice. This record, therefore, is in contrast to the usual method of compiling reports and statistics from textbooks and journals, from reports from large hospitals and lying-in institutions where thousands of cases are attended according to a routine method of aseptic technic, carried out by physicians, trained assistants and nurses whose work strictly conforms to the rules established by the particular institution with which they are associated. By strict routine they have been able to reduce the maternal mortality of from 10 to 20 per cent. found in some hospitals a few centuries ago, to less than 0.05 per cent.; but in general private practice conditions have not materially improved. I wish in this paper to show that, with careful observance of our modern aseptic and antiseptic methods, we can come close to the best statistics on record, even under the most varied circumstances. The cases reported have been cared for amid surroundings such as every general practitioner has to contend with. They have been found in private homes with trained help, with lay help and at times no help, except such assistance as is often more in the way than otherwise. Some were taken care of in the general hospitals, many of which do not give obstetrics the importance it rightfully deserves and must have in order to accomplish the best results. None of our general hospitals is properly equipped for obstetric work. Besides, obstetrics does not belong in a general hospital, for manifest reasons.

In practice, it has been my custom to have it understood that a woman expecting confinement must make her arrangements some time during pregnancy; my patients usually do this, often but a few weeks after the suspected pregnancy has begun. When the patient is a primipara, or a multipara with a doubtful history, she is always measured and examined, her past and present history gone over, and the urine is examined at the first opportunity, the twenty-four-hour quantity measured twice a week, and reexamined every three weeks. When the case is apparently normal, the patient is requested to report every three or four weeks in person. Each patient is instructed with reference to clothing, diet, exercise, bathing, bowels and whatever else calls for attention at the time. Each one is instructed in the care of the breasts and nipples during the last three months of pregnancy.

During the last two or three weeks, the patient comes in for a reexamination for position, presentation and for any abnormal or unusual conditions that may be present. At one of these visits each patient receives a list of articles for use at the confinement, which must be purchased and kept in a package, unopened. The nurse is selected some weeks before the expected date. I always urge a trained nurse whenever possible, and insist on a trained nurse during labor, at least in every case of a primipara being taken care of at home. When home surroundings are inadequate I always urge the hospital, for it is very difficult to do operative or any repair work in most homes with poor light and inadequate facilities and assistance. I make a second visit within the first twenty-four hours after delivery. This is very important, sometimes necessary. One daily visit is made afterward for three or four days, as indicated, until the patient is up and out of bed. At each visit the patient's general record is gone over since the last visit, and present condition noted, with inquiries into the bladder and bowel function. Diet is prescribed according to each individual case. After the puerperium the mothers are always instructed to take the knee-chest position three times daily for at least three months. Whenever necessary, patients are requested to come in for examination within three months after delivery.

In the series of 1,116 cases, the maternal results are summarized in the accompanying tabulation.

There was one cesarean section. The child is now 8 years old and well; the mother is well and strong. There were nine pairs of twins. The following abnormalities were observed: two cases of cleft palate with hare-lip. Three cases of spina bifida, located in each infant in the lower dorsal region, with two deaths shortly after birth; the child that lived was recently operated on by Dr.

2. Williams, J. Whitridge: Medical Education and the Midwife Problem in the United States, THE JOURNAL A. M. A., January 6, p. 1.

Ryerson for spina bifida, double club-foot and double retroverted knees; complete recovery followed except impaired function of one leg, which is improving. One case of complete exstrophy of the urinary bladder in a female child with absence of the pubic arch; this child died soon after birth. Three cases of facial paralysis, one congenital; this child died when about 2 years of age probably from a cerebral growth; the remaining two children, in whom the facial paralysis was caused by forceps, recovered.

There were seven cases of hemorrhage of the newborn. Sterile horse-serum was used in one of these, after a large bowel hemorrhage. The child recovered. Of the six that died, one lived about eight months.

There was one case of anencephalus, and one case of imperforate esophagus, in which the child died of starvation on the tenth day after birth. A catheter would pass 4½ inches from gums to the end of the proximal portion. From the stomach the esophagus led upward into the trachea.

SUMMARY OF MATERNAL RESULTS IN 1,116 DELIVERIES

	No.	Per Cent.
Normal	953	85.4
Artificial	163	14.6
Lacerations:		
No perineal lacerations	676	60.5
Lacerations of the first degree	56	5
Lacerations of the second degree	388	34.8
Lacerations of the third degree	10	.9
Maternal classification:		
Primiparas	404	36.2
Multiparas	712	63.8
Presentations:		
Head	1064	95.3
Breech	36	3.2
Transverse	5	.44
Face	5	.45
Positions: Head and Transverse:		
Left occipito-anterior	802	71.8
Right occipito-anterior	211	18.8
Right occipito-posterior	53	4.7
Left occipito-posterior	3	.26
Breech:		
Left sacro-anterior	22	1.9
Right sacro-anterior	14	1.2
Face:		
Left mento-anterior	3	.27
Right mento-posterior	2	.18
Convalescence:		
Good	..	99.82
Death from puerperal sepsis	1	.08
Post-partum hemorrhages	16	1.43
Adherent placenta	7	.6
Placenta prævia centralis	2	.18
Eclampsia in labor	3	.27
(These three cases were: one ante-partum, one intra-partum, and one post-partum).		
Phlegmasia alba dolens, severe type	3	..
Phlegmasia alba dolens, mild type	4	..

In 1905 just prior to this series I had a rare specimen in a primipara. Following the birth of a normal infant, came a "fœtus amorphus anideus" a little over 4 inches long and 2½ inches thick, with no head or extremities. It had a mass of black hair like that of a scalp, which covered about one-quarter of its surface. Dr. J. Clarence Webster reported this specimen and stated that it was the second of the kind he had studied.

The total number of infant deaths was thirty-eight, or 3.4 per cent. Of the deaths eleven occurred ante partum, eighteen post partum, and nine intra partum.

The care of this series of cases has required more sacrifice of time, labor, patience and comfort than a similar series would have required in a maternity hospital, and probably more than is generally given. But since most cases must be attended in the home, it is imperative that the profession should provide as high-grade care for the parturient woman and her child as any department of medicine can give, in order to save lives and unnecessary illness.

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BLOOD-CHANGES CAUSED BY THE HYPODERMIC ADMINISTRATION OF THE CANCER PROTEID *

J. WALTER VAUGHAN, M.D.
DETROIT

During the past six years, over two hundred cases of recurrent or inoperable malignant disease, which have come under my observation, have been treated by some method of vaccine therapy. Two forms of vaccine have been used in this work — namely, cancer residue and a vaccine made of the cancer-cell in its entirety. The preparation of cancer residue has been described in previous articles, so that it is sufficient to state that this is the water-soluble portion of the cancer-cell which is left after splitting off the toxic radical by means of heating the cancer-cells in a 2 per cent. solution of sodium hydroxid in absolute alcohol.

Cancer-cell vaccine is prepared by grinding cancer-tissue finely in a meat-grinder, after which it is rubbed up as a suspension in alcohol in a sterile mortar. Next, it is rubbed through a very fine-meshed wire sieve, the alcohol filtered off, and the collected cell substance air-dried. This is weighed and then placed in normal saline solution, making a 2 per cent. cell suspension. To this 0.5 per cent. phenol is added for the purpose of rendering it less likely to become contaminated. In the preparation of both residues and vaccines it has been found that satisfactory results can be obtained only when the tumor is of firm consistency and without necrotic or infected areas. The average injection of a 1 per cent. residue is from 5 to 20 minims; that of a 2 per cent. cancer-cell emulsion is from 5 to 10 minims.

When this work was first begun, it was based on the belief that it is possible to compel the human body to form specific ferments for the splitting up of any given proteid by the introduction of that specific proteid, as such, in a dead form, within the human body.

The most natural place to look for the formation of such a ferment is in the white blood-cells. For this reason daily differential leukocyte counts were made from the beginning of the work. Over 20,000 such counts have been made by my assistants and myself so that conclusions drawn from this portion of the work cannot be much in error. In the early stages of this work it was ascertained that those cases in which there was a marked decrease in the percentage of polymorphonuclear leukocytes, with a corresponding increase in the percentage of large or small mononuclear leukocytes, received benefit from vaccine injections, while cases in which the percentage of polymorphonuclear cells remained high, or were influenced but little, were but slightly benefited, or not at all. All cases treated were inoperable or recurrent after operation, so that by far the majority were absolutely hopeless at the start. In approximately 20 per cent. of these cases all visible signs of malignant tissue disappeared. This disappearance, however, has not always been permanent and in my cases treated by the vaccine method, which have been without treatment for from two to four years, the percentage of non-recurrences is reduced to ten. A review of these cases shows that the disappearance of evidences of tumor-cells depended, first, on the relative proportion of mononuclear leukocytes present, and sec-

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* From the Chase Cancer Research Fund, Harper Hospital.

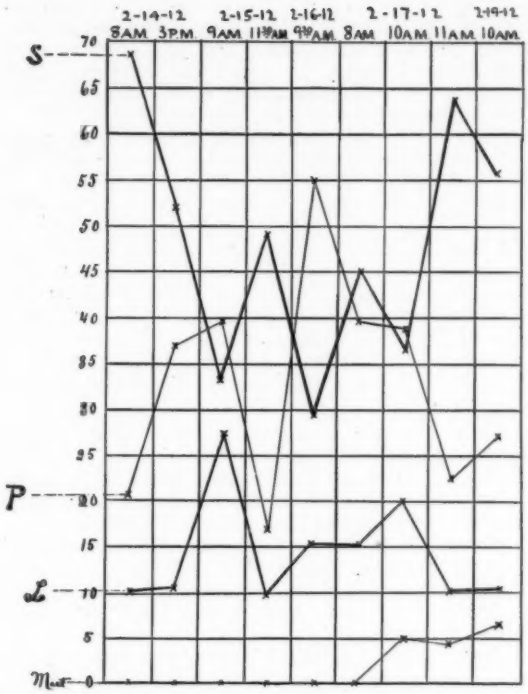

Chart 1.—Rabbit, Cage 346; 5 minims of 1 per cent. sarcoma residue injected subcutaneously at 8 a. m., 9 a. m. and 10 a. m. The line designated as P indicates, in this and the following charts, count of polynuclears; S indicates small and L large mononuclears.

ond, on the amount of cancer-tissue present. No estimate of the value of the use of a vaccine could be given by the microscopic picture of the tumor-cells. In other words, the malignancy of any given tumor is dependent on the bodily resistance of the patient to the growth of cancer-cells, and not on the nature of the growth itself. Time is too short to permit my going into this interesting branch of the subject in detail, but other experiments, which I shall mention later, tend to corroborate this view; suffice it to state that, in animal experiments, the chemical nature of the tumor-cells must have some influence, since a tumor can be trained to "take" almost invariably. My contention, however, is that the pathologist is not always able to state the degree of malignancy of a given tumor by an examination of it, but that a differential leukocyte count will give more accurate information on the subject.

Since a vaccine treatment would benefit only a very small percentage of cancer sufferers the next step was to see if it was possible to produce an active ferment for the splitting up of malignant cells in the bodies of animals, which, in turn, might be available in the treatment of the cancer patient.

For this reason sheep and rabbits were injected intravenously, intra-abdominally and subcutaneously with both cancer residue and cancer vaccine and frequent blood-counts made. All told, over 500 animals have been used, and the blood changes have been the same in all except about ten animals. Of these two were proved to be pregnant at the time of injection, which may have had some influence on the usual reaction. A glance at the accompanying charts will show that while the percentages of polymorphonuclear and small mononuclear leukocytes are not affected with any degree of regularity,

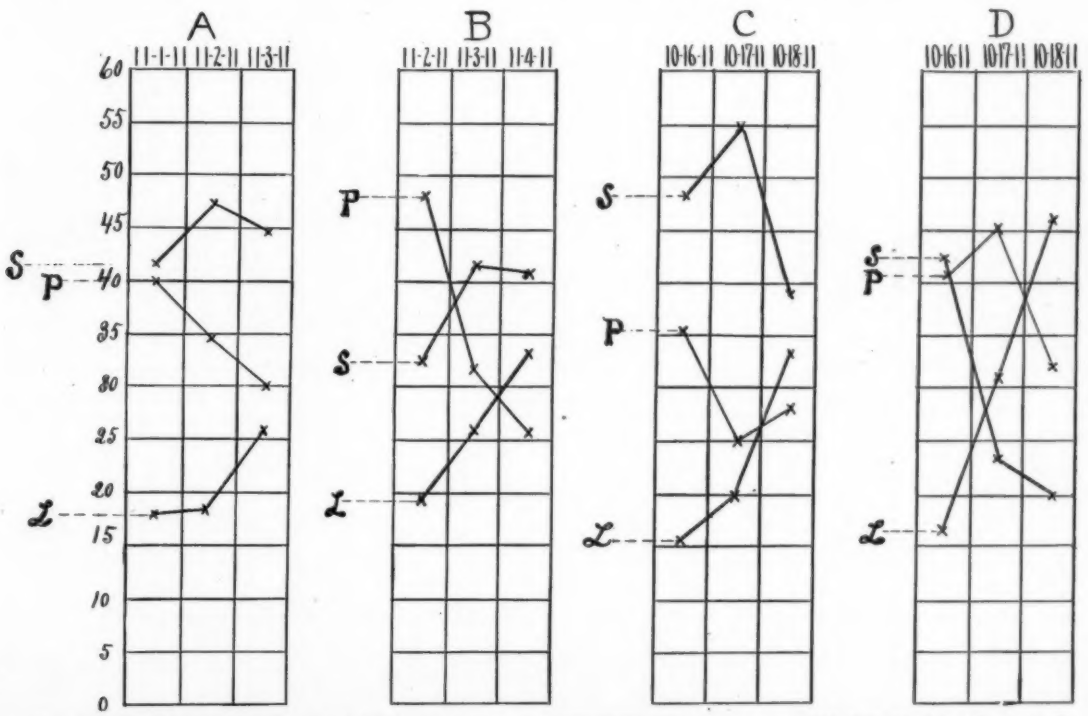

Chart 2.—A, rabbit given subcutaneous injection of 0.5 c.c. rectal adenocarcinoma (Morris); B, rabbit injected with 0.5 c.c. small round-celled sarcoma; C, rabbit given intraperitoneally 0.5 c.c. rectal adenocarcinoma (Morris); D, rabbit given intraperitoneally 0.5 c.c. rectal adenocarcinoma (Morris).

the proportion of large mononuclear cells is invariably increased from 100 to 400 per cent. within from twenty-four to forty-eight hours. This increase, however, is of short duration and recedes with rapidity after reaching its height.

Chart 1 shows the average blood change obtained through the injection of an active residue. The preparation used was made from a small round-celled sarcoma of the mediastinum. Three subcutaneous injections of 5 minims each of a 1 per cent. residue were given at hourly intervals, the first blood-count being made before the injections were commenced. The second count made seven hours later, showed an increase in polymorphonuclear cells from 21 per cent. to 37 per cent. and a corresponding decrease in small mononuclear leukocytes. The third count made twenty-five hours after the first showed the characteristic increase of large mononuclear cells which are here registered at 27 per cent. with a normal at the first injection of 10 per cent. Two and one-half hours later the percentage of this form of cell had returned to normal, which was again followed by a slight increase. It is probable that the highest registration of large mononuclear cells occurred between the second and third counts.

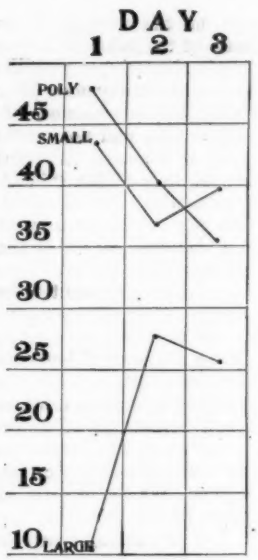

Chart 3.—Sheep injected with 0.5 c.c. sarcoma residue.

Chart 2 represents four rabbits which were given 0.5 c.c. each of cancer-cell vaccine by different methods. The first was given a single subcutaneous injection of rectal adenocarcinoma. The fourth represents the same amount of the same tumor given intraperitoneally, as does also the third. The second shows the injection of vaccine made from a rapidly growing round-celled sarcoma of the neck. From these charts it can be seen that the intraperitoneal method of injection gives a more rapid reaction than the subcutaneous.

Chart 3 represents the blood changes occurring in a sheep following the injection of 0.5 c.c. of sarcoma residue.

Chart 4 shows more frequent differential counts following repeated subcutaneous injections.

Chart 5 illustrates daily counts following a single intraperitoneal injection of cells from a breast adenocarcinoma. This is rather an extreme reaction inasmuch as the proportion of large mononuclear cells is increased from 6 per cent. to 35, about 500 per cent.

Chart 6 shows a very slight reaction following the injection of a breast-cancer residue which has almost lost its activity.

Chart 7 and A in Chart 8 illustrate two rabbits giving the average reactions. B in Chart 8 represents

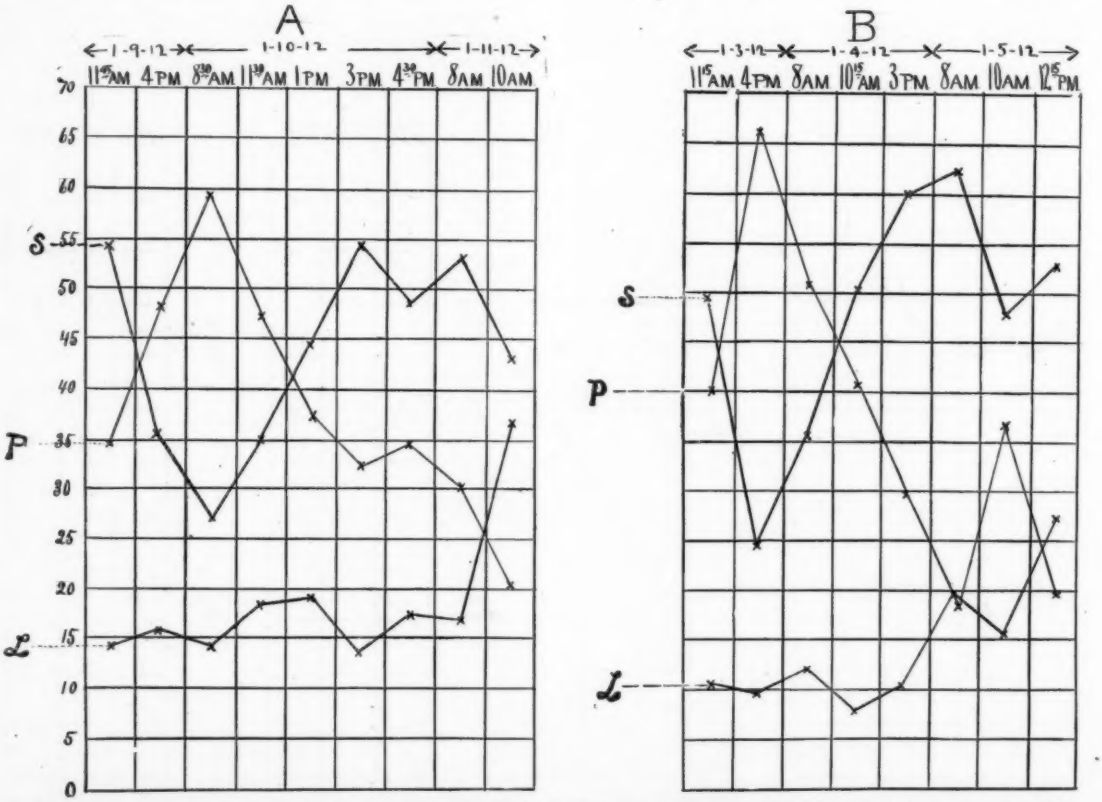

Chart 4.—A, rabbit injected subcutaneously with 5 minims of 1 per cent. s. r. sarcoma at 12 m., 2 p. m. and 3 p. m.; B, rabbit injected subcutaneously with 0.1 c.c. of 2 per cent. mixed residue at 12:15 p. m., 2 p. m. and 4 p. m.

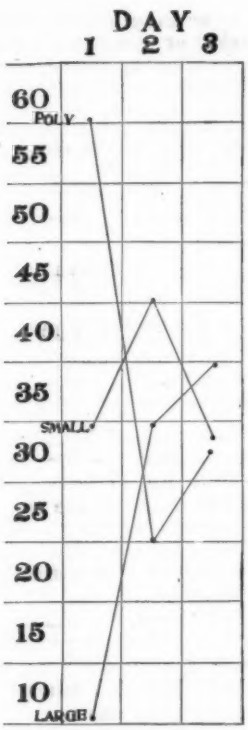

Chart 5.—Rabbit given a single intraperitoneal injection of cells from a breast adenocarcinoma.

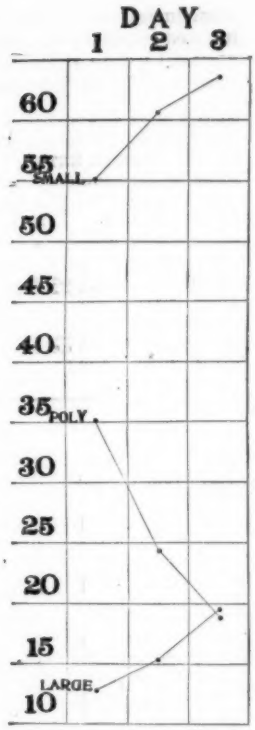

Chart 6.—Rabbit injected with a breast-cancer residue which has almost lost its activity.

the effect of giving an intraperitoneal injection of 10 c.c. of breast-carcinoma cell-emulsion into a rabbit sensitized to sarcoma vaccine, the injection being given when the percentage of large mononuclear cells was at its highest point.

In order to ascertain just what bearing this change in percentage of large mononuclear leukocytes had to the formation of a specific ferment, several rabbits were sensitized to the cancer-cell and then at varying percentages, 10 c.c. of cancer-cell emulsion were injected intravenously into the animals. In unsensitized rabbits there was no noticeable effect. Rabbits with a percentage of above 30 of large mononuclear cells usually died within one to three hours, and rabbits with a lower percentage but with a marked increase were made very sick, but recovered.

Sickness is immediate after injection; the animal at once falls on its side and begins violent scratching. The respiration is labored and, when death ensues, always stops before the heart-beat. Rabbits which die from a dose after being sensitized, however, usually have a stage of apparent rest from one-half to three hours after the first stage of excitability, which lasts for from three to five minutes. A possible explanation of this, in view of work that I shall mention shortly, is that the first stage of excitement is due to the destruction of cancer-cells and consequent liberation of their toxic radical by the specific ferment present in the blood-serum, while the fatal result which follows later is due to the reaction between the cancer-cells and the large mononuclear leukocytes.

The increased percentage of large mononuclear leukocytes is but a transitory affair, however, which usually lasts from four to ten hours, and it is impossible to produce fatal results in rabbits by intravenous injections of cancer-cell emulsion after this stage is passed. Consequently, I have applied the term "transitory sensitization" to this phenomenon.

If we bleed a rabbit at the height of this transitory sensitization and obtain the serum, this, when mixed with cancer-cell emulsion and incubated for one hour, will produce marked symptoms of poisoning when injected intravenously into a normal rabbit. The severity of symptoms depends on both the amount of cancer-cell emulsion and the serum. Given 5 c.c. of cancer-cell emulsion and 10 c.c. of the serum, a rabbit of from 500 to 1,000 gm. will be very sick but will invariably recover.

With this experiment in mind injections of both sheep and rabbit serum were given in twelve cases of inoperable carcinoma, the serum being obtained when the percentage of large mononuclear cells was at its highest point following injections of small amounts of cancer proteid into the animals. Of these twelve cases, eight were given rabbit serum and four sheep serum. Injections of from 1 to 5 c.c. were made every second or third day. Of the patients treated with sheep serum, one became sensitized after three weeks. Two others developed an acute nephritis.

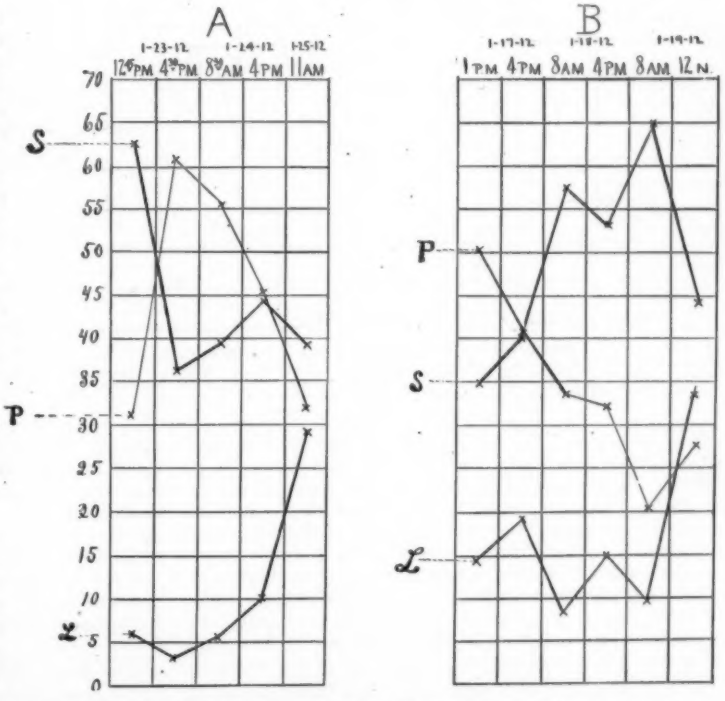

Chart 7.—A, Rabbit 54 Br., given 5 minims of 1 per cent. sarcoma at 1 p. m., 2 p. m. and 3 p. m.; B, Rabbit 54 Bl., given 5 minims of 1 per cent. sarcoma at 1 p. m., 2 p. m. and 3 p. m.

Of the eight given rabbit serum four developed acute nephritis with blood and albumin in the urine at the end of four weeks. While in all cases there seemed to be an improvement in the condition of the malignant growth, yet the use of the serum was discontinued, since in over 50 per cent. of the cases in which it was tried the serum complications rendered it impracticable.

The next step was to ascertain whether the specific ferment could be removed from the large mononuclear leukocytes in such a way as to be free from the dangers which were attributed to the serum. For this purpose rabbits were sensitized to the cancer-cell and, when the percentage of large mononuclear leukocytes was at its highest point, the blood was collected under sterile conditions in 0.33⅓ per cent. acetic acid. This was next centrifugated until the leukocytes were thrown down and the supernatant fluid decanted. The remaining leukocytes were next placed in a sterile mortar and mixed with a sufficient quantity of sterile quartz sand to cover. This was then ground up with vigor for fifteen minutes with the frequent addition of sterile normal salt solution until five times the volume of the leukocytes obtained had been added. Next, this normal saline extract was separated by passing through a Berkefeld filter, and tests were made for the presence of the specific ferment by adding varying amounts of the leukocyte extract to cancer-cell emulsion, incubating for one hour and then injecting intravenously into rabbits. Through repeated experiments it was ascertained that 5 c.c. of 2 per cent. cancer-cell emulsion, plus 10 c.c. of leukocyte extract, which was obtained when the percentage of large mononuclear leukocytes was 25 or above, would, when injected intravenously into a rabbit of from 500 to 1,000 gm., kill within from one to five minutes. This is well illustrated in the accompanying table.

TABLE SHOWING RESULTS OF INJECTING INTRAVENOUSLY INTO RABBITS CANCER-CELL EMULSION PLUS LEUKOCYTE EXTRACT INCUBATED ONE HOUR

Animal	Weight, Gm.	Rabbit Leukocyte Extract	+ Vaccine	Result
343 G.	646.5	10 c.c. carc. 100.....	5.0 c.c. 100	Died, 1 min.
167 G.	750	10 c.c. sarc. 51 res..	5.0 c.c. 100	Died, 1 min.
157 W.	1,500	10 c.c. sarc. 100.....	5.0 c.c. 100	Very sick one-half hr.; rec.
53 Bl.	1,050	7 c.c. sarc. 51 res..	5.0 c.c. 100	Died, 5 min.
96 G.	1,317	7 c.c. sarc. 51 res..	2.5 c.c. 103	Died, 4½ hr.
251 W.	645	10 c.c. sarc. 51 res..	.....	Not sick.
251 Br.	842	15 c.c. carc. 100.....	.....	Not sick.
167 W.	700	10 c.c. normal saline.	5.0 c.c. 100	Not sick.

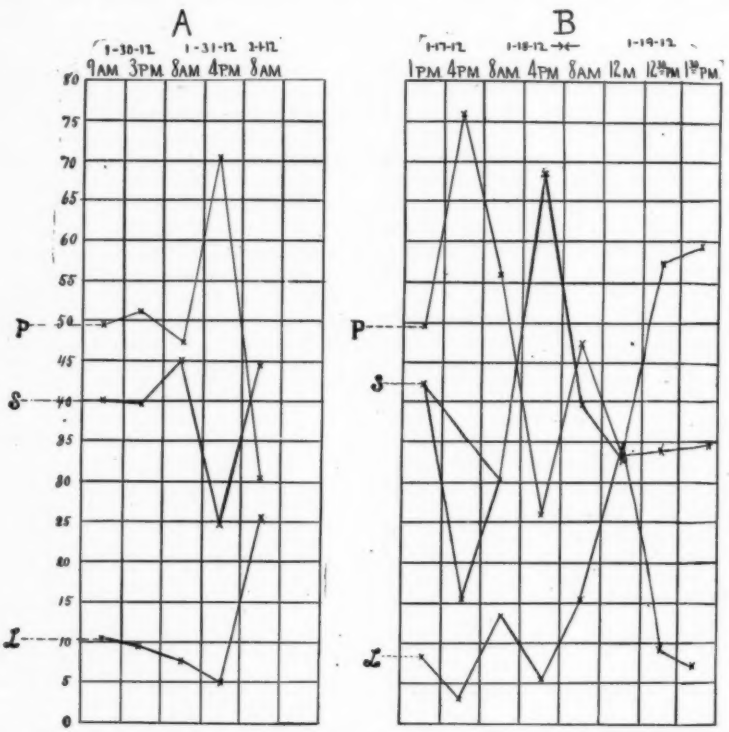

Chart 8.—A, Rabbit 167 W., given 5 minims of 1 per cent. sarcoma at 8:30 a. m., 9:30 a. m. and 10:30 a. m.; B, Rabbit 54 T., given 5 minims of 1 per cent. sarcoma at 1 p. m., 2 p. m. and 3 p. m.; at 12:15 p. m. 10 c.c. of breast carcinoma-cell emulsion (Mel.) was injected intraperitoneally; rabbit died, 8-10 hours.

The entire mass of leukocytes, when removed from the filter and mixed with 5 c.c. of cancer-cell emulsion and incubated one hour, failed to have any effect on a rabbit when injected intravenously, thus showing that most of the specific ferment was soluble.

Again, 10 c.c. of the leukocyte extract, prepared in the same manner, from a normal rabbit which had not been sensitized, added to 5 c.c. of cancer-cell emulsion and incubated one hour, produced no effect when injected intravenously into a normal rabbit. This would tend to show that the sensitized animal possesses some specific chemical substance which reacts with cancer-tissue which the normal rabbit does not possess. That this substance is specific is further shown by the fact that 10 c.c. of leukocyte extract from a sensitized animal, plus 5 c.c. of a 2 per cent. normal-skin vaccine, incubated one hour, produced no effect when injected intravenously into a rabbit of 450 gm.

The same chart shows that sarcoma residue or vaccine sensitizes to carcinoma as well as sarcoma, and vice versa, so that the probable conclusion is that the chemical change within the cell is the same for both sarcoma and carcinoma.

While it is not my intention at the present time to make mention of the use of leukocyte extract in the treatment of cancer, yet, because of the added danger to the patient and also because of the added proof of specificity, attention should be called to one fact that tends to show the presence of a specific ferment.

Even as small an amount as 1 c.c. or more of leukocyte extract when injected directly into the tumor may cause sudden and severe symptoms. In four cases, when this procedure was adopted, I have had the patient complain within from one to five minutes of difficulty of respiration. Next, he would lose consciousness, which would be accompanied by rather violent muscular twitchings and lowered pulse-rate. This stage would last from five to

ten minutes and would be followed by a period of rest, from fifteen minutes to one hour in duration, which in turn would be followed by a violent chill, and temperature ranging from 103 to 106 F. This would last from one to six hours and would be followed by from twenty-four to forty-eight hours of extreme exhaustion. At no time have I obtained such a reaction, even with doses of 5 c.c., when given subcutaneously away from the tumor, although a chill from one to three hours after injection has been observed.

It is my desire now, however, to call attention only to the animal experiments as described above. These have occupied two years' time and appear to throw some light on the cancer problem. I do not wish to create an impression that I advocate the use of sensitized leukocyte extract in the treatment of malignant disease, or that its use will be of any benefit to the sufferers from cancer. I have used it only in absolutely hopeless cases and only over a period of six months; consequently, any report of the subject from this point of view must be reserved for another year at least.

The report of the animal experiments is given, however, with the hope that those who are interested in this branch of cancer study will either corroborate or disprove the work, since it is only through the help of many that the truth will eventually be found.

In addition, I would state that a residue or vaccine remains active only as long as it is capable of producing blood changes in the animal injected. I have had a residue remain active for three years. The vaccine made from the cell in its entirety is not so stable, lasting from one week to six months. As a consequence I prefer to keep my cancer-tissue in alcohol and prepare only small amounts of vaccine at a time.

Washington Arcade.

ABSTRACT OF DISCUSSION

DR. J. W. MCCONNELL, Philadelphia: What does Dr. Vaughan mean when he speaks of the impossibility of pathologists telling much about the activity of the tumor—does he not refer to the mitotic figures? The general opinion is that these are present in large numbers, and do not necessarily indicate the activity. What effect on the individual is produced by injecting this leukocytic extract?

DR. L. J. HIRSCHMANN, Detroit: I have observed some of Dr. Vaughan's work since he started; and, in answer to the inquiry of Dr. McConnell, I wish to state that in a number of cases of carcinoma of the bowel there has been a uniform regularity in the decrease of the polymorphonuclears and in the increase of the large mononuclears, when the leukocytic extract and residue have been injected. One could read the blood-picture without seeing the patient, and get a pretty good idea of the clinical condition of the patient on that day. It is merely suggestive, but it is uniform. After reading the blood-picture, it was not necessary to see the patient to tell whether he was improving or not.

DR. G. W. MCCASKEY, Ft. Wayne, Ind.: Two points of especial interest occurred to me during the reading of the paper. The first has reference to the biologic significance of the large mononuclear leukocytes. It appears perfectly clear from the leukocyte curves, that there is a very definite reaction on the part of these cells to the injection of the cancer residue. This fact would seem to me to point to the conclusion that these cells play a very definite rôle, and probably should not be regarded as transitional in any sense. It would seem to indicate that they form a class by themselves just as definite as the small mononuclears or polymorphonuclears.

The other point has reference to the bearing which this work might have on the embryonic theory of neoplasms. This theory seems to be predominant at the present time, and yet these investigations point, it seems to me, very clearly, to some sort of specificity in malignant neoplasms. It would, of course, be quite possible that a specific toxin could act in conjunction with embryonic tendencies. I believe that this actually occurs in various pathologic conditions, as I have endeavored to point out in the pathology of pernicious anemia. We clinicians are greatly indebted to the pathologists for work such as this, so suggestive in its bearings, even if it does not as yet lead to definite and final conclusions.

DR. ISAAC LEVIN, New York: How much necrosis and sloughing was there in these tumors that Dr. Vaughan was handling? Were the differences in the leukocytes going parallel with clearing up of this sloughing and necrosis? Does Dr. Vaughan mean by that the clinical improvement of the cases, or was he handling solid tumors without any central softening, necrosis or sloughing? This matter seems of great importance from our knowledge and understanding; whether there is a real specificity in that difference in the leukocytes of the blood, whether there is a specific relationship with cancer, or whether it is due to an amount of dead tissue present in the body.

DR. J. W. VAUGHAN, Detroit: In reply to Dr. Levin, lately I have used an active ferment in a few cases with small tumors, when operation was absolutely refused, on condition that the patients would agree that, if benefit was not observed within two weeks, they would submit to operation. Among these cases were some breast tumors, which were not ulcerated at all. These tumors, when the ferment is injected, will swell up and soften, and afterward gradually contract down and harden again. At this time, it is proper to inject again; and they go through the same process again. An open tumor, one that is ulcerated, will do the same way after injection, and there is apt to be considerable bleeding for twenty-four hours afterward. This shows an increased vascularity following the injection of the specific ferment.

In reply to Dr. McCaskey's question with regard to the significance of this work in connection with the function of the cells, it is my belief that just as polymorphonuclear cells protect the body against outside infection, so the large mononuclear leukocytes protect the body against broken-down body tissue cells, and against autogenous growths or cancer cells. We are constantly having local injuries and broken-down tissue cells, and I believe that it is the function of the large mononuclear leukocytes to take care of these. I have invariably noticed that when a vaccine is used, the betterment in the patient ran in accordance with the increase in large mononuclear cells. For example, in one case which maintained 27 per cent. of large cells for weeks, which is a higher count than you usually are able to get, the tumor disappeared with rapidity. Transitional leukocytes I usually class as mononuclear leukocytes.

The question concerning the effect of the ferment on the human individual, was covered in my answer to the questions of Dr. Levin. If cancer vaccine is injected into a man who has cancer an increase in the large mononuclear leukocytes results. I have had cancer vaccine injected into myself; and I have found that I get a higher increase, when the vaccine is active, in such a case than I would in the case of a person who had cancer. In other words, there is a much higher increase in a normal individual. Concerning the prognosis in cancer through a study of the microscopic sections of any tumor, I believe that it is customary to estimate the malignancy by the presence or absence of mitotic figures. In our work, Dr. Sill, who is our pathologist, has run closely along with me in this work. We found that there apparently is no relationship between the percentage of large mononuclear leukocytes and the presence or absence of mitotic figures so far as we could estimate.

The Importance of Open-Air Exercise to the Gouty.—In the case of middle-aged men in affluent circumstances it is difficult to get them to moderate their appetites and regulate their diet, but they will often accede to the suggestion of taking more exercise. Motoring is good, but a long walk in the country every Sunday will do more to keep down their gouty proclivities. Exercise in a stuffy gymnasium is irksome and monotonous, and is soon abandoned.—William Murrell in *Clin. Jour.*

ADHESIONS AND CONSTRICTIONS OF THE BOWEL: THEIR DEMONSTRATION AND CLINICAL SIGNIFICANCE*

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PHILADELPHIA

The importance of adhesions and constrictions of the bowel is being emphasized by the large number of writers on this subject. Throughout the medical world surgeons, roentgenologists and internists are realizing that many of the obscure abdominal symptoms, usually of a chronic nature, may be explained by the recognition and demonstration of adhesions or constrictions of the bowel.

Judged by the frequency with which Virchow found these adhesions, one must conclude that they are present often without producing symptoms, but that when symptoms are present and no satisfactory cause can be found, the possibility of adhesions or constrictions of the bowel must be carefully investigated.

The frequency of the adhesions has been further emphasized by the recent investigation of Mollison and Cameron[11] in fifty consecutive autopsies at Guy's Hospital, the age of the subjects varying from 3 weeks to 68 years, cases of generalized peritonitis being excluded from the series. They found that peritoneal adhesions were present in all adults and older children, and in eleven of the seventeen children under 5 years, including one of 3 weeks, they were more numerous, stronger and denser in adults than in children and in the six fetuses examined adhesions were entirely absent. They were sometimes found around the pylorus and gall-bladder, but more frequently in connection with the large intestine. The small intestine was never involved, with the exception of the last few inches of the ileum. Adhesions were frequently found in connection with the cecum, but only twice with the appendix. In fourteen cases there were well-marked bands passing from the ascending colon to the transverse colon, so as to fix the flexure at a very acute angle. Otherwise the transverse colon was generally free from adhesions, which were also infrequently in the splenic flexure and in the descending colon. The iliac and the pelvic colon were sometimes the seat of dense adhesions, but less often than the cecum and ascending colon.

My observations with the *x*-ray correspond roughly with the relative frequency in the respective locations described by Mollison and Cameron,[11] except that the evidences of adhesions were more frequently seen or recognized about the duodenum and gall-bladder regions, and in the colon the most frequent seat of stagnation or fecal retention has been in the cecum and ascending colon. On the other hand, Hertz[12] says: "With the *x*-ray I have rarely found even in the severest cases of constipation any prolonged stagnation in the passage of the intestinal contents before the middle of the transverse colon is reached." I cannot explain this difference in our findings.

CONSTRICTIONS DEMONSTRABLE BY ROENTGEN RAY

The value of the Roentgen rays for the demonstration of the effect of adhesions and constrictions of the bowels is being recognized more and more each day. With the increase of skill I feel that in all cases in which adhesions or constrictions give rise to symptoms the Roentgen-ray method should serve to demonstrate them.

Adhesions can be demonstrated by means of the Roentgen rays when they cause distortion, displacement, constriction or immobility of sections of the bowel. These adhesions may be benign or malignant. A general survey of the patient's history and other clinical evidence in conjunction with the Roentgen-ray findings will usually serve to differentiate. In some cases the Roentgen-ray evidence alone is practically conclusive.

Constrictions of the bowel may be temporary or permanent. The temporary constrictions may be spasmodic or due to kinks, intussusception, volvulus or pressure effects of loops filled with gas.

The permanent constrictions are due to adhesions or malignant growths.

In general, their effects are recognized by the administration of bismuth mixtures by mouth or by rectum, and the patient then studied both fluoroscopically and radiographically. Repeated examinations and examinations in several positions are usually necessary to avoid errors. The temporary constrictions may or may not be present at the time of the examinations, but if present they can be demonstrated. At least in most cases the conditions which would lead to temporary constrictions can be shown even in the absence of actual constrictions, such as malpositions, abnormal loops of the bowel, excessive length and mobility. The effects of such constrictions may at times be shown by local dilatations. Colonic dilatation is more apt to be shown by injections by rectum than by food given by mouth. In fact, I believe that excessive dilatation of the colon will not be shown by bismuth food followed from the mouth so long as the muscular tone remains good.

The temporary constrictions are more apt to be complete and very badly defined, while the permanent ones are seldom complete and extend over a larger area.

All of the various types or causes of constriction of the bowel have been demonstrated, roentgenologically, by myself, and most of them have been reported on by others, particularly Rieder,[13] Haenisch,[14] Koehler,[15] Hertz,[12] Groedel,[16] Stierlin,[17] Grashey and Brugels.

In the small bowels, the three locations in which constrictions and adhesions are most likely to occur are in the first portion of the duodenum, at the terminal portion of the duodenum and at the terminal portion of the ileum. I have been struck particularly by the frequency with which I have been able to demonstrate the effects of duodenal adhesions in the gall-bladder regions. They were clearly shown in at least seventy patients who were sent for examination. So far as I have learned only sixteen of these patients have been operated on, but in every instance the adhesions were present. In these cases, the hepatic flexure of the colon was also frequently involved, as diagnosed by the *x*-rays, and at times other organs. At times the adhesions were found to be very slight, while in others they were quite firm. The accuracy with which they have been recognized makes this means of diagnosis most important. The details

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

* Because of lack of space this article is slightly abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section.

11. Mollison and Cameron: Guy's Hospital Reports, 1908, lxii, 143, Ref. Hertz.

12. Hertz: Constipation and Allied Intestinal Disorders, London, 1909

13. Rieder: München. med. Wchnschr., 1906, lii, Fortschr. a.d. Geb. d. Röntgenstrahlen, x, No. 4, p. 207.

14. Haenisch: München. med. Wchnschr., 1911, No. 45.

15. Koehler: Lexikon der Grenzen des pathologischen und Röntgenbilde, Hamburg, 1910, 164.

16. Groedel: Atlas und Grundniss der Röntgendiagnostik in inneren Medizin, München, 1909, 218.

17. Stierlin: München. med. Wchnschr., No. 36, 1911.

of this examination and the errors to be avoided have been published previously in THE JOURNAL.[18]

The chief evidences of these adhesions, as first described by Schurmeyer[19] and confirmed by myself, are a retraction of the duodenum and pylorus upward and to the right, in the gall-bladder region or the under surface of the liver, and at times constrictions and dilatations of segments of the duodenum. The chief symptoms associated with this condition are those which suggest gall-bladder or duodenal disease (in several cases duodenal ulcers and in a few gall-stones or definite gall-bladder disease was found to be associated). Pain, often of a burning nature, in the epigastrium and extending to the gall-bladder region or at times to the left, is a common symptom. It usually occurs only at intervals, and when present is felt particularly several hours after a meal. I believe that it is most likely to be present at the time when there is an associated inflammation of the duodenum or gall-bladder, and during the times when gastric peristalsis is most active. Tenderness over the gall-bladder region and in the epigastrium is common.

The constrictions at the terminal portion of the duodenum as described by Jordan,[20] I have seen only three times. This is a kink produced by the terminal attachment of the duodenum, occurs particularly in connection with exhausted or enfeebled states, or associated with duodenal disease and is recognized by the distention of the duodenum with the bismuth mixture as it passes through. It is usually a temporary constriction and may be missed during an examination.

"Lane's kink," or a constriction in the terminal portion of the ileum, I have recognized only a few times. This is difficult because in this class of cases there is so much overlapping of the small and large bowel. It can, however, be shown by separating the folds of the bowel (protected) by fluoroscopic palpation or by change of posture (knee-chest or Trendelenburg), which will separate the overlying folds and show the distention on one side of the kink. It can be shown at times by following food from the mouth and examining six hours after its administration. At times a distinction of the terminal ileum is seen twenty-four hours after the bismuth meal. On one occasion I recognized it by the passage of a bismuth enema through the ileocecal valve to the "kink," which was located 3 inches from the valve. I believe that with increased skill we should recognize most of these, when they are sufficient to give rise to symptoms.

The constrictions of the colon are most liable to occur at the hepatic, splenic and sigmoid flexures, though they may occur anywhere. Carcinomas are especially apt to occur at the sigmoid flexure, cecum and rectum. The permanent constrictions, such as are produced by new growths and adhesions, are best recognized by the technic described by Haenisch,[14] by which one watches fluoroscopically a bismuth mixture (bismuth subcarbonate 75 gm., kaolin 300 gm., water 1,000 c.c.) flow into the large bowel and notices any constriction, its degrees and whether it is permanent or only a temporary muscular contraction. After examining a patient in the recumbent posture as Haenisch does, I also examine him in the erect posture. This will often clear up doubtful points. Carcinoma may be recognized in this way quite early. At any time during the procedure plates may be made for record and for closer study.

18. Pfahler, G. E.: THE JOURNAL A. M. A., June 17, 1911, p. 1777.
19. Schurmeyer: Fortschr. a.d. Geb. d. Röntgenstrahlen, xv, 6.
20. Jordan: Brit. Med. Jour., May 20, 1911.

If a carcinoma be present, the constriction will be permanent, can be recognized both during the inflow and outflow of the mixture, is usually limited to a comparatively small area when early, or associated with a distinct tumor mass when seen late, cannot be obliterated by any manipulation and is likely to be associated with localized tenderness. A meal given by mouth will often be checked at the same point.

The classical clinical symptoms associated with carcinoma of the bowel are familiar and need not be repeated here, but the early symptoms are often overlooked. The passage of a slight amount of bloody mucus, in the absence of hemorrhoids or benign rectal lesions, should at once arouse suspicion. Pain along the course of the colon, rather definitely localized in a patient past 40, should make one think of carcinoma, and a careful *x*-ray examination should be made.

Constrictions due to adhesions are more likely to be extensive and to be associated with folds of the bowel, or they may produce definite kinks with no actual obliteration of the lumen. This latter point may be determined by manipulating the bowel until it becomes completely distended after a temporary obstruction. When associated with the constriction the bowel is likely to be drawn out of position or fixed. These latter points are likely to be absent early in carcinoma.

Intussusception is usually acute and rarely chronic. It can be recognized by the same method as described above.

Twists in the bowel are likely to occur in patients who have an elongated colon and are usually associated with visceroptosis. They may be acute, may recur and produce a long series of intestinal disturbances which occur periodically, and are associated with gastric, intestinal and toxic symptoms. They should be demonstrated by a colonic injection, and when vomiting is not a prominent symptom they may be confirmed by food passed by mouth. In one very chronic case with symptoms extending over a period of twenty years the splenic flexure was twisted on itself and had locked up a collection of gas which gave the patient a sense of distention and pain in the left hypochondriac region. The enema will often release these twists, and an obstruction may be present at the beginning of the injection, but as the pressure is increased the obstruction disappears.

PRESSURE EFFECTS OF GAS LOCKED IN THE SIGMOID LOOP

This is a condition which, I believe, is not uncommon, and yet it is strange that it seems not to have received much, if any, recognition. It is a condition that occurs in connection with a large sigmoid loop. I am not yet clear as to whether the large sigmoid loop is the cause and primary condition, or whether the loop has been stretched by repeated distention with gas and thus elongated. This sigmoid loop may extend up to the under surface of the liver or to any height below this point. When this loop becomes distended with gas, it displaces the stomach, may obliterate the transverse colon by pressure and stop the colonic contents, may block the descending colon or both the transverse and descending colons, or may become twisted on itself. There may also be several loops or twists which will produce similar results, but to a lesser degree. Hertz[12] refers to congenital kinks of the intestines and explains this by the relatively excessive length of the pelvic colon. He says: "Where it is unusually large it becomes bent on itself once, twice or three times, and the flexures may

be so sharp that obstruction to the passage of feces occurs." Jacobi[21] first drew attention to the subject and he subsequently came to the conclusion that an abnormally long pelvic colon was one of the most common causes of constipation in infants. Natural recovery from constipation occurs between the fifth and seventh years, owing to the fact that the growth of the pelvic colon is relatively slow. In only severe cases the obstruction produced by the kinks may be complete, so that no meconium is discharged even with the aid of enemas until several days after birth.

I have found no cases recorded in which this excessive loop of the sigmoid (or pelvic colon) was given as a cause of temporary intestinal obstruction in an adult, nor any evidence of such condition being shown by the *x*-rays. I can explain this only by a failure in interpreting incomplete studies, or by the fact that patients of this group have not frequently been sent for examination, since they are usually regarded as neurotics and therefore not worthy of serious study.

The patients in whom I have recognized this condition suffer from headache, nausea and often vomiting, abdominal distress and a sense of gaseous distention. These conditions occur usually periodically but may be more or less constant. Drugs have given only temporary relief, and both the patients and physicians become discouraged. Looking at this group in the light of a temporary intestinal obstruction (without acute symptoms) due to a twist of or pressure by an elongated sigmoid loop distended with gas, one can understand why the attacks occur at irregular intervals and why they follow fatigue and the eating of gas-producing foods, since these are the conditions which will be associated with intestinal fermentation which distends the loop with gas.

One can also understand why a purgative will often abort an attack, and why vomiting or assuming the recumbent posture will give relief, since these are the conditions which will assist in moving the gas from the loop and permit the colonic contents to move onward.

There are a large number of patients suffering from the above-mentioned group of symptoms, and while I have examined comparatively only a few of this group, I have been able to find an explanation of the symptoms so often that I feel that we shall be able to understand this group better in the future and hold out new hopes for them.

The length of this paper will not permit the report of even illustrative cases of all the conditions that I have described, but since most of them are already well recognized by the profession and since sufficient evidence is on record to show that all the conditions described can be demonstrated earlier and better by the *x*-rays than by any other anti-operative method, I shall confine myself to a brief report of a few cases illustrating the obstructive effects of colonic loops. The figures are tracings made from some of the reductions from the original plates which were used to illustrate the paper and are therefore true representations of the conditions as found in these cases.

CASE REPORTS

CASE 1.—Mr. E. K., aged 34, a mechanic, consulted me Oct. 2, 1911, for an *x*-ray study of his gastro-intestinal tract. During ten years he had suffered from "bilious attacks" which had been growing worse, but he was able to continue his work. During these attacks he was constipated and had nausea, vomiting, headache and abdominal pain and distentions.

Roentgen Examination.—Figure 1 shows an excessively long sigmoid loop which rises at least 2 inches above the umbilicus and moves freely. During the colonic injection a kink at the junction of the descending colon with the sigmoid prevented the free flow of liquid. Figure 2 shows how this loop had blocked both the transverse colon and the descending colon at the end of forty-eight hours. After a bismuth meal had been taken this remained absolutely stationary during at least nine additional hours. At the end of seventy-two hours the colonic contents had passed the middle of the transverse colon but were blocked in the descending colon (Fig. 3). This loop may rise high enough to compress the pyloric end or displace the stomach. This occurs in this case and is shown in Figure 4, in which instance it passed back of the transverse colon, showing that only at times does it cause compression of the colon.

CASE 2.—Mrs. E., aged 54, referred by Dr. J. C. Heisler, for twenty-five years had had periodical attacks of severe headache associated with severe vomiting, abdominal distention and constipation. These attacks usually recurred every two weeks, but at times she would be free from them for six weeks. Originally they lasted only a day, but at the time of examination lasted three days. The patient was chronically

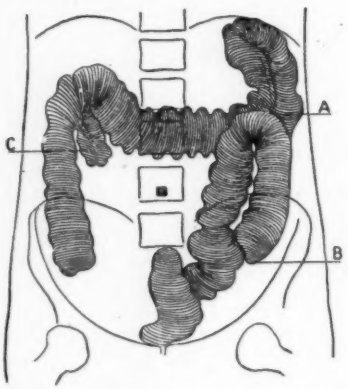

Fig. 1.—A, Top of sigmoid loop. B, Kink at junction of descending colon and sigmoid. C, Reduplication in first part of transverse colon.

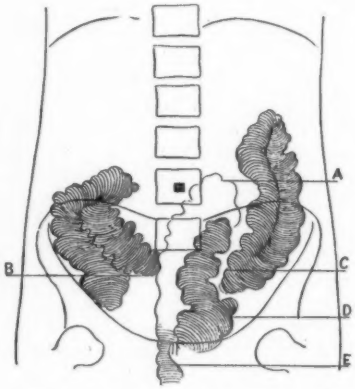

Fig. 2.—A, Top of sigmoid loop filled with gas. B, Transverse colon compressed. C, Descending colon compressed or kinked. D, Feces in first portion of sigmoid. E, Feces in rectum.

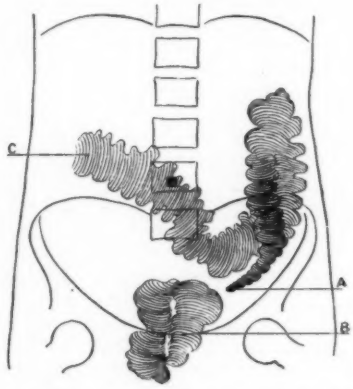

Fig. 3.—A, Blocking of descending colon at end of forty-eight hours. B, Feces in rectum. C, Ascending and first part of transverse colon empty.

21. Jacobi: New York Med. Jour., 1894, xlv, 613.

constipated and was much distressed by the pressure of gas after eating.

Roentgen Examination.—I found a sigmoid loop that extended up to the liver (Fig. 5). This high position of the sigmoid remained even in the standing posture and seemed to be held up by the gas at its upper pole, while the transverse colon dropped down in front of it (Fig. 6). It is easy to understand how the taking of food into the stomach, lying in front of this loop of the sigmoid, gave the patient a sense of gaseous distention which could not be relieved by belching. Figure 7 shows how this same gaseous loop blocks the contents of the transverse colon at the end of twenty-four hours after a bismuth meal. Figure 8 shows that the transverse colon is displaced downward and gives freedom at the end of forty-eight hours, but the contents are now blocked at the end of the descending colon.

These are extreme cases with extreme symptoms, and yet a less extensive loop may give actual symptoms of acute intestinal obstruction, such as occurred in a case of which Dr. Anthony Bassler has sent me a lantern-slide; in which the patient was prepared for operation, when an enema gave relief, and subsequent dietetic and medicinal means brought about a complete recovery.

CASE 3.—Mr. C. F. B., aged 59, referred by Dr. William Martin, for four years had suffered from severe headache, associated with indigestion, abdominal distention and distress, and constipation.

Roentgen Examination.—I found a large sigmoid loop, a generally elongated colon, reduplication and twisting of the first part of the transverse colon with abdominal retention in the cecum and ascending colon, with other evidence of interference with the passage of the colonic contents of the sigmoid.

CASE 4.—Miss A., aged 20, referred by Dr. M. P. Warmuth, had suffered from constipation, a sense of gaseous distention of the abdomen and "bilious attacks."

Roentgen Examination.—I found a large sigmoid loop associated with evidence of adhesions and localized areas of retention in the pelvic colon. These were confirmed by operation.

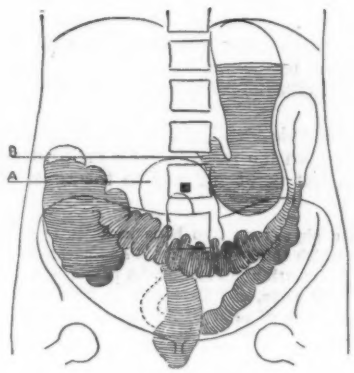

Fig. 4.—Showing sigmoid loop causing compression and displacement of the stomach. A, Gas in sigmoid. B, Compression of pyloric end of stomach by the gas in the sigmoid.

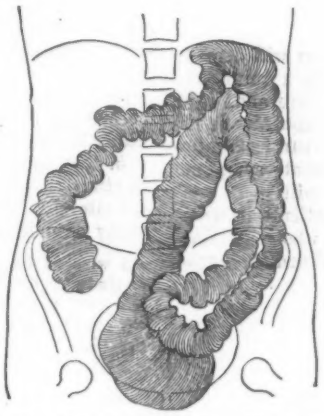

Fig. 5.—Colonic injection showing the outline of the sigmoid loop, which rises to the under surface of the liver; also a dilated ampulla of the rectum. Supine posture.

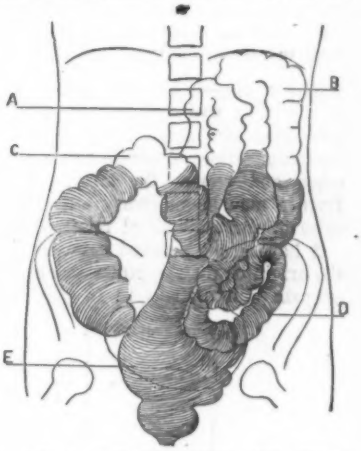

Fig. 6.—Standing posture after colonic injection, showing double sigmoid loop, with gas at the top. A, Gas in top of second sigmoid loop. B, Gas in splenic flexure. C, Gas at top of hepatic flexure. D, First sigmoid loop. E, Dilated rectal ampulla.

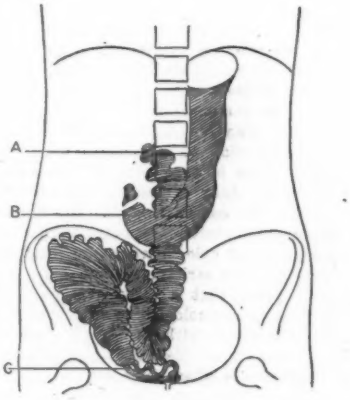

Fig. 7.—Showing obstruction of the transverse colon by the sigmoid loop distended with gas, at the end of twenty-four hours after a bismuth meal, with the stomach hanging over the top of the transverse colon. A, Top of obstructed transverse colon. B, Stomach. C, Coils of the ileum still filled at the end of twenty-four hours.

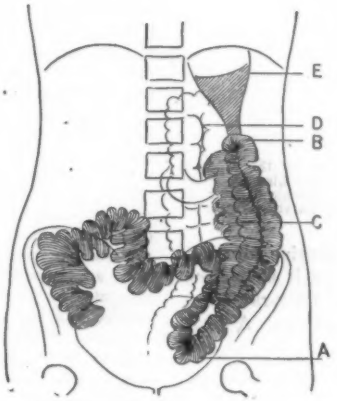

Fig. 8.—Showing compression and displacement of the body of the stomach to the left by gas in the sigmoid loop. A, Transverse colon dipping into the pelvis and passing to the other side of the descending colon. B, Splenic flexure. C, Ascending portion of the sigmoid loop filled with feces. D, Top of sigmoid loop filled with gas. E, Stomach only partially filled and displaced to the left.

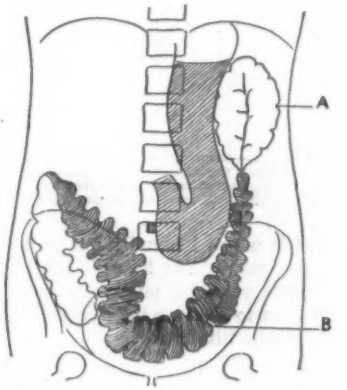

Fig. 9.—Obstruction caused by splenic loop filled with gas. A, Gas in loop. B, Lower end of descending colon blocked by the sigmoid loop.

I have seen a number of cases in which a loop at the splenic flexure seemed to be the cause of the symptoms. The following will illustrate:

CASE 5.—Mrs. S., aged 40, referred by Dr. L. Napoleon Boston, for eighteen or twenty years had been troubled with pain and aching in the left hypochondriac region. She had been gradually getting worse. She was generally constipated.

Roentgen Examination.—I found a loop at the splenic flexure which seemed to be distinctly twisted, and locked in it was a collection of gas (Fig. 9). One can understand how the gas would accumulate in this loop and the symptoms continue until the oncoming colonic contents were sufficient in force to release this twist.

The treatment of these obstructive loops will demand a diet that will reduce fermentation to a minimum, associated with abdominal exercises, massage and, when symptoms arise, an enema to remove the contents of the colon and release the twist. Finally surgical interference may be necessary either when acute symptoms arise or for the radical relief of the condition.

I have also examined a number of patients in whom the origin of the symptoms was obscure, who complained of pain and distress in the left hypochondriac region

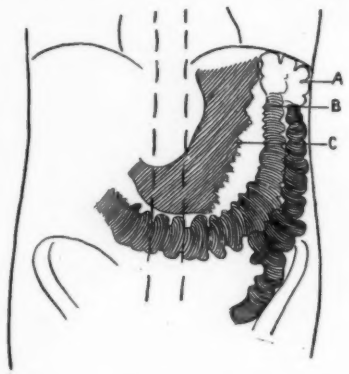

Fig. 10.—Obstruction caused by adhesions between the stomach and splenic flexure of colon forty-eight hours after bismuth meal. Descending colon injected per rectum. A, Gas in splenic flexure. B, Constriction. C, Serrated appearance of greater curvature.

and in whom I found the cause to be extensive adhesions about the splenic flexure. In the future it should not require years for physicians to think of an *x*-ray examination to clear up the diagnosis of such cases. A single case will illustrate.

CASE 6.—Mr. S., aged 29, had suffered for five years with severe pain in the left hypochondriac region. At first it occurred at intervals but during nine weeks had been constant day and night. The pain was not influenced by food, and his bowels moved regularly daily. He had been in three different hospitals and had consulted at least three of our best internists, with no relief and no diagnosis. In general he had been regarded as a neurotic. He came to me on his own account and begged for an *x*-ray study.

Roentgen Examination.—I found evidence of extensive adhesion at the splenic flexure which was shown by constrictions involving the last part of the transverse and the first part of the descending colon, as though one had passed a band around the two portions choking off a collection of gas resulting in dilatation of the splenic flexure above. These adhesions were shown to involve the stomach also by the serrated border on the greater curvature (Fig. 10). These findings were confirmed in every detail by Dr. Ernest Laplace at operation, and the patient recovered with complete relief from his symptoms.

CONCLUSIONS

1. Localized peritonitis resulting in adhesions is a common condition, and while it must often be present without producing any symptoms it is a pathologic condition that should be considered in all obscure abdominal cases.

2. Constrictions of the bowels may be permanent or temporary. The permanent constrictions are liable to be due to adhesions or carcinomas and have been demonstrated in many cases by a number of roentgenologists.

3. Temporary constrictions may or may not be present during an examination, but the condition which would give rise to such obstructions will be present and can be demonstrated.

4. Colonic loops, particularly affecting the sigmoid, may produce repeated temporary symptoms and have been found associated with the group of periodical "sick-headache" cases.

5. The cases of "colonic loop" that I have been able to study so far have been too few to enable me to draw definite conclusions, but point the way to the relief of many chronic cases.

I wish to thank the physicians who have made it possible to study the cases on which this paper is based and particularly Drs. Boston, Heisler, Warmuth and Martin who have permitted the brief reports of their cases, and Dr. Anthony Bassler who has loaned me lantern slides of some of his cases for study.

1321 Spruce Street.

ABSTRACT OF DISCUSSION

DR. JUDSON DALAND, Philadelphia: I think that this paper is most valuable in showing the aid that the *x*-rays are able to give in making diagnoses hitherto impossible regarding pathologic conditions of the alimentary tract. The diagrams presented showed obstructions from kinks. We have been able by means of the *x*-rays to diagnose obstructions caused by adhesions alone. A point of interest relates to the topography of the colon; we can see not only the presence of a coloptosis, but also its extent. This line of work must be supplemented by a study of the normal redundancy of the colon and its relationship to surrounding parts. In most instances a stricture of the colon can be shown by means of the *x*-ray after the introduction of a bismuth meal by mouth; the point of constriction is thus brought out accurately; a thorough and careful study of the plates is necessary to show exactly where the constriction is. By means of colonic injections we may determine the lower border of the constriction. I have not been able, however, to measure with accuracy the extent of these strictures. We must all recognize as an important point that a large experience is required on the part of the roentgenologist to interpret the findings. Each case must be dealt with by itself. Often a large series of plates must be studied and the greatest care taken. The time consumed is often considerable.

DR. ANTHONY BASSLER, New York: We should be grateful to Dr. Pfahler for introducing loops as a means of constriction of the colon. In the examination of the normal individual through the side of the abdomen, the *x*-rays show that the cecum occupies a central position. Continuing up, the ascending colon and hepatic flexure are posterior; the intestine then runs forward, coming in contact with the anterior abdominal wall at the flare of the costal arch. It then runs across the abdomen to a corresponding point on the opposite side and dips posteriorly again, running upward to the back of the abdomen under the spleen where the splenic flexure is made. The splenic flexure and descending colon, like the ascending, are posterior and take slightly forward courses at the upper end. When the sigmoid is reached, the colon runs forward from the back of the abdomen to the anterior abdominal wall, is in contact with the wall for a few inches, and then bends backward to join the rectum. Therefore the ascending and descending colons are posterior; only a small portion of

the transverse colon and a small portion of the sigmoid are anterior, and the rest of the large intestine runs forward and backward. It is in these forward and backward courses that loops occur.

A plate of mine that Dr. Pfahler showed was from a man who had been constipated for many years. One morning he was seized with nausea which gradually developed into vomiting; this continued until the third day, when it was stercoraceous in type. There was marked abdominal pain in the lower left side and general abdominal distention. There being little doubt as to the diagnosis, he was prepared for operation, because purgatives and enemas did not prove successful and no flatus had been observed for several days. It occurred to me when I saw him that there might be a looping of the sigmoid, because of the situation of the pain and the general distention of the intestines above it. Surrounded by surgeons ready to operate on him, we tried another enema in the knee-chest position, at which a hard mass of feces came away, followed by fluid and gas with a subsidence of pain and the distention; of course there was no further concern about the case. A week or two afterward I made the *x*-ray plate you saw, disclosing the vertical loop in the sigmoid.

In dealing with these loops, particularly of the sigmoid, we should take into consideration postural methods to untwist them. As they twist in the upright and prone-dorsal position, to untwist them the patient must be placed head and abdomen down. In these cases the feces from the proximal portion come in contact with the feces of the distal portion overlapping the intestine, and then the feces in the distal portion dam back the contents in the upper section.

DR. FRANKLIN W. WHITE, Boston: There is another side of this *x*-ray work that is not generally appreciated, even after one has seen the set of pictures that have been presented to us—the difficult technic, the long series needed to prove a point, the frequent artefacts, the difficulties of interpretation. A great many do not appreciate these points; many are too busy to study them carefully. All these cases show the value of this method, which requires great care. When we compare the present *x*-ray method with the old methods of outlining the stomach and intestines we see a great difference. Nothing can compare with the present *x*-ray methods in detecting constrictions of the large intestines, and in separating the medical from the surgical cases of constipation. This is a method which should be used in all gastro-intestinal cases that are difficult of diagnosis. In obstinate cases of constipation which do not yield to thorough treatment the *x*-rays will frequently tell us more than all the rest of the examination put together.

DR. G. E. PFAHLER, Philadelphia: As Dr. Daland has said, there is a great deal of work to be done in each case, and one can seldom make a diagnosis from one or two pictures. Those that I have presented to you were picked out. It is customary for me to make six or twelve or more plates and many repeated fluoroscopic examinations before I make a diagnosis in a given case. When I began the examination of these cases I did not know really how much work there was to do; considerable expense is incurred and much time consumed in every examination. This work is not necessarily a part of the routine work, however, but is used only in the chronic cases and those that have resisted all other means of diagnosis. It should be borne in mind that the sigmoid loop is only one place where constriction can occur; considerable stress has been laid on this because it has been so frequently overlooked. Dr. Jacobi called attention to the condition eighteen years ago as occurring in children and infants, and as being one of the causes of chronic constipation and at times of intestinal obstruction.

Industrial Disease.—Industrial disease is a misleading term, used for convenience only, or through ignorance, to indicate certain pathologic states, the results of insanitation in industry. Industry itself is never necessarily unwholesome. Industrial processes, it is true, are objectionable and crude oftentimes, but bad industrial conditions are always remediable.—W. Talbot in *Am. Jour. Public Health.*

THE STUDY OF THE URINE IN NERVOUSNESS *

EDWARD B. ANGELL, M.D.
ROCHESTER, N. Y.

At the Washington meeting of the American Neurological Association in 1910, I read in part a paper on this subject. But on account of the press of papers it was greatly curtailed and never published. Since that time analysis of a larger number of cases has deepened the conviction that the simple test there suggested has a definite value in the physical examination of patients in all cases of nervousness not dependent on organic disease. For the past nine years accurate notes of this class of cases have been kept and certain features having a definite bearing on the causation of functional disorders of the nervous system have been noted, to which I shall refer later.

For the past twenty years it has been my habit to make routine examination of the urine of practically all patients under my care and this examination is repeated at each office visit. I had already noted and even recorded at an earlier date the frequency of the reaction to which I call your attention.

TOXEMIA INDICATED BY A PIGMENT RING

In testing these urines with nitric acid, I noticed frequently a dark pigment ring in place of the well-known white ring, known as Heller's albumin ring. As you know, Heller's test consists of underlaying the urine with strong nitric acid. The albumin, if present, appears as a white ring at the point of contact between the urine and the nitric acid. It is at the same point that the pigment ring is found, a reaction which doubtless has been noticed by most of those present. The pigment ring varies from a dark brown to a bright red color. When pronounced it is very distinct and, in my experience, of definite value as a laboratory aid in diagnosis. In making this test the easiest method is to take a test-tube partly filled with the suspected urine and plunge a pipet loaded with pure nitric acid to the bottom of the urine in the test-tube. The finger covering the top of the pipet is then slowly released and the acid gradually replaces the urine at the bottom of the test-tube. By this method the procedure is both expeditious and certain. The contact line between the urine and acid is sharp and well defined.

The chemical nature of this ring I cannot explain. The chemistry of the nitrogen compounds of the urine is very difficult of determination. That it is due to the oxidization by the nitric acid of some of the aromatic constituents of the urine through degradation of the albumins is most probable. It has sometimes been confounded with indicanuria, but in my experience it is another reaction entirely. The presence of indican in the urine has been noted in conjunction with this reaction, but in the large majority of my patients indican was absent. Indicanuria may be associated with this condition, but it certainly is not the cause. The same is true also of the biliary reaction. Bile is present in the urine of these patients at times, but, as can be shown by standard tests, is more frequently absent. This pigment reaction may be associated at times with either indican or bile, or indeed with both, but certainly is dependent on neither one. This is well exemplified in the illustrations which I shall shortly bring to your

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

attention. Nor can it be due to the ordinary color of the urine, inasmuch as the deepest reaction may occur in the palest urine. Usually the urine in these patients is persistently acid and relatively of a high specific gravity. The acid urine is found not only in the morning but also during those periods of the day when the normal condition of the urine should be alkaline. A similar color ring even more pronounced is seen in the urine of patients taking potassium iodid. This reaction, however, is so characteristic that it is not likely to be confused with the one I am demonstrating. I have also noticed a marked color ring in the urine of patients with exophthalmic goiter. Whether this indicates any relationship between the perversion of the thyroid secretion and the disturbance in metabolism to which I am calling your attention, I cannot say. It might be well to note that uric acid has no influence whatever in causing this pigment ring.

Physiologically it can be stated that this urinary reaction is due to some disturbance of metabolism, particularly of the protein metabolism. Its presence in the urine is in no way pathognomonic of nervousness. It is constantly present in febrile urines associated with excessive muscular waste; in acute digestive disturbances, or so-called biliousness; indeed, in all instances in which there is a perversion of nitrogen metabolism. It is almost invariably present in the urine of people who overindulge in protein foods. On the contrary, it is not found in the urine of persons who use protein foods in moderation or only rarely. Furthermore, the correction of the dietary will cause it to disappear, or at least reduce it to the normal reaction—a faint yellowish contact line. In truth, this pigment ring is simply an indication of toxemia. Whether this toxemia is due to auto-infection from intestinal putrefaction or to suboxidization of the nitrogen end-products of metabolism is as yet undetermined.

This pigment ring, whatever its cause, I have uniformly found in the urine in all nervous cases.

ANALYSIS OF A THOUSAND CASES

This class of nervous cases, covering my office records for the past nine years, embraces eighty cases of neurasthenia, thirty of general nervousness including hysteria, 102 of intestinal dyspepsia and 922 which I regarded purely as lithemic. It is proper to say that I do not regard my proportion of neurasthenics or hysterics to the total as an indication of their relative frequency, inasmuch as this series of case records is made up almost wholly of office cases. I am satisfied, however, that true neurasthenia is a much less common disease than is generally considered. In many of my cases, due to toxemia purely, the patients were referred to me as "neurasthenics" by their attending physicians. True neurasthenia is a far more serious and intractable disorder of the nervous system. In all these 1,200 cases a careful examination was made of the nervous system for the exclusion of organic disease.

SYMPTOMS FOLLOWING DISTURBANCE OF METABOLISM

The symptoms of which these patients complained are familiar enough to those who have to do with nervous people. The commonest subjective symptoms, in order of their frequency, are weariness, irritability, marked depression of spirits, constant tendency to introspection and loss of will-power. Over half of the patients suffered from constant fear of loss of mind, of death or other disaster. Nearly as large a proportion were emotional, complained of backache in the lumbar region, and had a dull, heavy feeling in the legs. One of the common symptoms mentioned was "loss of memory" and "inability to fix the attention"—a mental state significant of toxemia. I usually found the following physical conditions: Seventy-five per cent. of my patients had a coated tongue, usually brownish or yellowish; in over 60 per cent. the skin was sallow, particularly at the folds of the axilla and over the abdomen; about one-half of these were troubled with constipation and about 60 per cent. had abdominal distention from intestinal gas. It is a striking circumstance that a large proportion, practically 90 per cent., live indoors or follow indoor occupations. Just half of my patients gave a family history indicating neurotic inheritance; about 30 per cent. gave a history of arthritic ancestry. Curiously, almost 85 per cent. normally possessed a cheerful disposition, although mental depression was so constant a complaint; while only 50 per cent. could be regarded as having a nervous temperament. Unexpectedly my statistics disclosed that nervous women only slightly exceeded the number of nervous men. Certainly there were less than 100 more women than men in this series.

The urine was carefully examined in all but 116 of these cases. In over 800 cases the urine, when tested with nitric acid, showed the distinct color line I referred to. It was absent in less than 200, so that this urinary reaction to which I have called attention was present in over 80 per cent. of this class of cases. The reaction of the urine was acid in 66 per cent. of the cases and my examination of the urine was usually of a specimen which should normally be alkaline or neutral. Over one-half of these patients admitted overfree use of protein food. I can state that indican was present occasionally, but probably not in 10 per cent. of the cases recorded.

The frequency with which this pigment reaction in the urine is associated with the depression, worry and apprehension in persons who are "just nervous" is striking, to say the least.

When, however, the underlying toxemic condition is corrected by a proper dietary; and elimination through the kidney is increased—for it is the kidney that removes the nitrogen waste of the body—through the free use of a salicylate and an alkali, such as the bicarbonate of soda, the change is striking. The complexion gradually clears up, the patient forgets many of his most aggravating symptoms, his mind becomes clear, his "nerves" no longer trouble him, and the pigment reaction disappears from the urine.

In conclusion, cases of the class which demonstrates the presence of this reaction are frequently encountered in the office of the consultant. The characteristic symptom present is one of depressed nervous action. A patient complains of dull headache, restlessness, sleeplessness, vertigo, backache, numbness and a general good-for-nothing feeling. He lacks initiative and fears that he is losing his memory, while his self-consciousness and self-attention are generally exaggerated. He is weary, especially after a good night's sleep, his legs feel heavy, he is irritable and peevish, complains of cold hands and feet, lacks will-power, and is emotional and at times apprehensive, fearing that he will lose his mind or die. His tongue, particularly at the base, is usually coated with a yellowish-brown fur; his skin is sallow, his abdomen distended and his expression somewhat anxious. Indeed, I see such persons frequently on the street. The dull sallow complexion, the far-away look, as though the

individual were thinking of himself rather than of what he saw, and the expression of tension and gloom suffice to indicate the depression of a morbid mind.

They are the patients whom the general physician calls "just nervous," lectures roundly for "not having more will-power" and finally sends to the specialist with "nervous prostration."

At times, indeed, the subjective symptoms simulate the more grave organic maladies, such as brain tumor, meningitis, dementia, etc., of all of which I have had several examples. A thorough examination of the nervous system discloses no indication of organic mischief, such examination being the needful counterpart of the urinary investigation to insure diagnosis. It is wholly a functional disturbance and one seldom associated with true neurasthenia. But no class of patients is more miserable or more deserving of sympathetic assistance.

Furthermore, from a large experience in the so-called traumatic neuroses, I am convinced that the nervous symptoms that are more or less remotely connected with the accident are in reality due to the same causes. The plaintiff's "bill of particulars," luridly paraded before the jury by his attorney, is made up of a list of these same subjective complaints. The neurologic examination discloses no structural change, no lesion. The case is built on a foundation of "nervous feelings" following some accident, often trivial in nature, which are in reality due to digestive disturbances, induced either by sudden cessation of healthful occupation or by overfeeding due to the mistaken anxiety of a sympathetic family.

Treatment, to be efficient, must be rigid and persistent. Sometimes two weeks suffice to bring entire relief, but usually two months or more are required. In obstinate cases a year of adherence to this regimen was necessary before the patients became absolutely well. But sooner or later the skin will become clear, the coating will fade from the tongue, the pigment ring disappear from the urine, the mind of the patient be freed from his burden of apprehension and his attention directed into channels of normal activity.

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CONVULSIVE SEIZURES ASSOCIATED WITH POSTMENSTRUAL GASTRO-INTESTINAL DISORDERS *

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That the diagnosis of the nature of convulsive seizures under our present classification often presents great difficulty no careful student of medicine can deny; and it is to emphasize this fact that the description of this condition is presented.

Four well-marked cases of this kind have come under my observation during the past ten years, and in three I have fortunately been able to observe the convulsive seizures. The family histories of two of the patients seem to be negative; the mother of the third was hysterical and the father of the fourth a "peculiar man." The previous personal history was that of good health in two cases, neurasthenia in the third and hysteria in the fourth.

In all four the condition developed after the age of 20; in one it followed an acute indigestion from playing basket-ball after a hearty meal, in another it followed the shock of a mastoid operation, and in the other two there was no obvious exciting cause beyond the usual bowel troubles so common in women.

In all the bowels were fairly regular until the close of the menstrual period, which was followed by a period of from one to four days of constipation. During this period the patient often appeared to be in good health, or, at other times, there was a coated tongue, headache, depression and disturbances of vision. Then suddenly, most often in the morning but usually at any time during the day, and occasionally during sleep at night, the patients developed a sense of terror, abdominal pain, and would have one or more large fecal movements, often followed by diarrheal movements containing mucus. During this period there were marked eructations and passages of gas. The pulse became rapid and feeble, the extremities cold, a fine rapidly increasing tremor developed in all the voluntary muscles, and vertigo and telescopic vision were at times present. Many of the seizures, especially toward the end of the disease, did not pass beyond this stage; and in every instance it was of sufficient duration for the patient to seek or summon assistance.

When the epileptiform stage followed, consciousness became clouded or lost and a marked general tonic spasm developed, causing clenching of the fingers over the thumb, flexion of the forearms, adduction of the arms, extension of the thighs, legs and feet, opisthotonos, rotation of the head and eyeballs to one side, distortion of the mouth, and at times, a harsh cry from the expulsion of the air from the thorax. The eyes were at times open and at others closed. The facial pallor gave place to cyanosis; the pupils dilated but, as a rule, responded to light, though in some seizures they were immobile. The duration of this tonic phase was, as a rule, longer than is seen in cases considered to be classically epileptic.

A clonic phase always followed the tonic, beginning with repeated tremors followed by marked general clonic contractions which often showed the coordinate type of hysteria rather than the irregular jerking which is described as epileptic. In some seizures the tongue was badly bitten; but in no case, even when the patient voided large quantities of urine after the attack, did she do so during the seizure. The cyanosis of the face was replaced by flushing as the respiration became rapid and irregular. The clonic spasms, like the tonic, lasted a longer time than is usually found in epileptic cases and were at times intermittent. The tendon reflexes which could not be obtained in the tonic phase, on account of the marked spasm, were present both during and after the clonic phase. Some of the seizures terminated in delirium but deep coma was the rule. In all cases marked polyuria usually followed the attack. Following the seizures there was at times a period of depression, headache, muscular soreness, diarrhea and abdominal pain.

Examination of the patients during the menstrual interval failed to disclose any abnormal conditions of the abdominal or pelvic organs or any stigma of hysteria or other nervous disease. The clinical picture presented by these patients fully sustains the opening contention of this paper and it is a grave question as to the nature and consequent prognosis. That these seizures would be classified as epileptic by many physicians — and two of the cases were so considered by men of eminence — is not a matter of surprise.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

In attempting to sustain the contention of the epileptic nature of these seizures, we are confronted with the situation that, though the term "epilepsy" has been used by physicians for about two thousand years and until the last few decades was believed to represent a distinct pathologic entity, it is now recognized as representing a condition or symptom complex. This situation has arisen from the facts that no one can give an undisputed definition for the epileptic condition, that the various groups of cases included under this term often vary materially, and that symptoms once held to be diagnostic of epilepsy are now known to occur in convulsive seizures of other conditions. The confusion which now exists concerning the class of cases which should be considered as typically epileptic is made worse by the use of the term "true epilepsy" by writers who do not designate what cases they would class as such.

The evidence which we now possess as to the nature of epileptic seizures would indicate that its phenomena are due to organic disease of the cerebral cortex, either from inherited or acquired causes, producing a weakness of the inhibitory functions of its neurons, and it is also held by some that it is by the accumulation of certain toxins in the system that the seizure is produced. That this is true of certain types of epileptic seizures may be fairly assumed, but that it is true of all types is rather theoretical for the reason that in many cases, such as are due to gross organic cortical disease, no one has demonstrated any such toxin and therefore the question must remain open until further investigation has determined its status.

It seems to be established that many toxic bodies may act as such exciting causes and that these may be introduced into the body from without or may originate within the body from disturbances of metabolism. This latter group is of especial importance in relation to the etiology of the cases now under consideration. As stated by Spratling, derangements of the gastro-intestinal canal are of greater etiologic importance than is generally supposed, and the gastro-intestinal cases are due to toxins which are absorbed into the blood directly or which act on the gastro-intestinal nerves.

There can be no question, I think, but that the convulsions in these four cases were due to gastro-intestinal disturbances; this fact alone, however, does not establish a diagnosis of epilepsy, as such factors are also recognized as exciting causes for hysterical seizures.

The difficulty of distinguishing between epileptic and hysterical convulsions is often complicated by the fact, as stated by Dejerine, that the two conditions may occur in the same seizure, or, as stated by Dejerine and Bailey, the two conditions may replace each other in different seizures. The entire absence of any of the constant stigmata of hysteria during the interval between the seizures is presumptive but not conclusive evidence that the convulsions were not hysterical. It is admitted that such stigmata may be absent in some cases of hysteria or, in the words of Dejerine, "the absence of all stigmata makes the diagnosis impossible."

The marked and long prodromal period which occurred in these cases favors the hysterical theory of the nature, for, as Bailey says, the prodromal period and aura "are not necessary in epilepsy and constant in hysteria;" Ziehen holds that "both may be absent in hysteria."

Biting of the tongue in hysteria is denied by Bailey and Janet, but admitted as a rare condition by Oppenheim and Church, and thus no positive opinion can be based on its occurrence.

Oppenheim and Ziehen assert that the pupils always contract to light in hysteria and not in epilepsy; Bailey states that they usually do contract, and Dejerine speaks of an immobile pupil in hysteria. Thus all that can be said for this sign is that a pupil which always reacts to light indicates hysteria, while one that does not is of doubtful value as a diagnostic symptom.

It seems to be unquestioned that the knee and foot reflexes are lost after an epileptic attack and always present after a hysterical one. This sign, then, is of real diagnostic value, and it is to be noted that they were never absent in my cases.

Nocturnal occurrence is frequent in epilepsy and exceptional in hysteria, as stated by Bailey and Dejerine, with the result that this symptom is unfortunately of little value.

Evacuation of the bladder during the spasm is denied by Bailey but claimed as a rare symptom by Dejerine and Church. This did not occur in my cases even when the bladder was distended, which favors the hysterical character of the seizures.

The face in the hysterical convulsion is described by Church as pale and then congested; as congested but not cyanosed by Janet; Dejerine, Ziehen and Oppenheim admit the occurrence of cyanoses and thus its occurrence is not unquestioned evidence of epilepsy.

The long duration of the tonic and clonic spasms speaks in favor of the hysterical character of the seizure, as also does the marked postural positions in the tonic phase and the coordinate character of the movements in the clonic.

The initial harsh cry of epilepsy was absent in my cases though its occurrence in hysteria is recognized by Church.

In epilepsy the patient is usually exhausted after the seizure, with a marked desire to sleep, while in hysteria recovery is usually immediate; it may, however, be gradual with delirious or somnolent phases. Both of these latter conditions occurred at times after the seizures in my patients, but certain of the seizures were followed by deep coma and subsequent impaired mental states closely resembling epilepsy.

In both hysteria and epilepsy, though the period of invasion may be remembered, there is no recollection of the convulsive phases as a rule, but at times there may be less complete amnesia, as was the fact in my cases. It is evident then that with such a conflict of evidence as to the diagnostic differences between hysteria and epilepsy the nature of such seizures as these cannot be asserted even with reasonable certainty until medical science has settled the differences between the two, but from the evidence before us, its weight would seem to indicate a hysterical nature.

Against such a hysterical classification it can be urged that there is no evidence of the existence of any psychical trauma in any of the cases, and that their course was uninfluenced by any form of suggestion, which should be the case with the so-called pithiatic symptoms of the most recent classification, but to accept this latest classification of the Paris school would be to deny the occurrence of such symptoms as nausea or vomiting from disgusting sights or the diarrhea or disturbed heart action of fright. Toxic bodies, as already appears, can originate epileptic phenomena; they also can originate that emotional mental condition with constricted conscious field which forms the basis of all hysterical manifestations, and thus if we admit that these seizures were of intestinal origin, it is not fatal to the theory of their hysterical nature.

The confusion already shown as to the nature of epilepsy is made worse by classing convulsive seizures of recognized toxic origin as due to such origin, when they occur only a few times, and as epileptic when they are chronic. The fact that a mixed form of convulsion is recognized further complicates the situation and certainly offers a haven of refuge from our want of real knowledge. I am not willing to accept this theory, however, for the obvious reason that some observers would declare certain symptoms in an attack as epileptic, while others would be equally positive of their hysterical character. That these convulsive seizures, whatever may be the name which we apply to them, were due to auto-intoxication seems a well-founded belief, and my theory of their production is as follows: These patients had a previously existing weakness of the cerebral cortex and the function of menstruation produced a condition of exhaustion of the pelvic and abdominal nervous mechanism; the consequent disturbance of the functions of the abdominal viscera led to the production of toxic substances, which by their action on the cortex produced the convulsions.

Treatment based on this theory has in my cases proved most satisfactory. If my cases are to be classed as epileptic, the results have been much more favorable than are usually obtained in the cases grouped under that title. During the menstrual interval no means were employed beyond the ordinary ones of rational hygiene. When menstruation appeared, rest was ordered and brometone in 5-grain doses, four times a day, was ordered. This form of bromin was chosen because it has little or no tendency to disturb the gastro-intestinal function which is a frequent result with the bromids containing an inorganic base. When constipation appeared the bowels were at once opened by small repeated doses of castor oil or calomel in fractional dose, as the more powerful drugs, salines or cascara (rhamnus purshiana) produced violent evacuations, usually associated with a seizure. Suppositories and enemas also acted in the same unfortunate way.

The pale cold skin and rapid feeble pulse during the period of invasion of the seizures indicate the use of stimulants and none proved so satisfactory as inhalation of strong ammonia water which, even at first, arrests the seizures. Weak chloroform vapor also had a decided action in aborting them. By the use of these two agents it soon became possible for the patients themselves to abort the attacks which terminated in loud eructations and passages of gas. The knowledge that these agents would act in this way had great influence in removing the state of fear which was so prominent, and therefore the element of suggestion was unconsciously employed. Under this plan of treatment, these patients have had practically no trouble for over a year, and the relief to the patients and their families, after being told that the patients were suffering from that dreaded disease, epilepsy, has been very great.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BRUSH AND ANGELL

DR. CHARLES W. HITCHCOCK, Detroit: I have frequently observed this brown ring in the urine of my neurasthenic and other patients. The ring has been equally frequent of occurrence in the urine of patients who have rejoiced in the most abundant good health and have come to me for other reasons than illness; in patients who were quite as cheerful as a normal man could be expected to be. Most urine will show a marked dark pigment-ring such as Dr. Angell speaks of, so I have naturally been unable to correlate it with any definite nervous condition.

DR. GEORGE A. MOLEEN, Denver: I have been observing the changes in the urine coexistent with neurotic states evidenced by nitroso-nitric acid. While these color reactions are very uncertain, the interpretation of them may likewise lead to erroneous conclusions, especially when they are observed from such little understood groups as the alloxan, as well as the bile-pigments. It has been my plan to boil the upper layer of urine in a long, narrow test-tube and to underlay the urine by the passing of cold nitric acid along the side of the tube, thereby passing through the upper heated portion. This partially reduces the nitric acid to nitroso-nitric; the cloud in the upper heated portion is cleared if phosphates are present while if albumin is present the coagulum is increased. The oxidation of nitric acid on pigments, mostly derivatives of the aromatic series, is the cause of the color reaction; this oxidizing power is increased when nitric acid is partially reduced; Gmelin's and Pettenkoffer's color reactions are due to this fact. At the point of contact of the acid and urine, if the urates be in excess, there will be a red, granular line; while a deep scarlet line or a bright green line of almost pencil-mark thickness is caused by the bile-pigments. My interpretation in reference to the appearance of the reaction is in accordance with the experience of Dr. Angell. In addition, I have noted that above the line of contact a dark smoky cloud in urine, showing as indicated by other tests the presence of indican, has been quite common in the depressed neurasthenic cases and when present will usually show indican by the chloroformic method. I have always believed these reactions to be of importance and I mention this process as one simple in application and confirmatory, one point with the other, while at the same time it is indicative, by reason of the increased oxidizing power, of the presence of a good many of the pigments.

DR. TOM A. WILLIAMS, Washington, D. C.: I am in accord with one of the previous speakers who said that the tests which Dr. Angell has devised are by no means invariable, and that they fail to show disease in patients in whom one sees a clinical picture which one believes to be a toxicosis, but a toxicosis in which patients recover on treatment in the manner spoken of by Dr. Angell, namely, marked reduction of the proteins. I wish to ask Dr. Angell if he himself has made control observations on individuals who did not show the extreme symptoms of depression which seem to characterize the stage that gives us reactions according to his observations. I, too, am at a loss to estimate quantitatively the degree of the reaction in some cases in which it does occur, and cannot say that the reaction is more than occurs in quite a number of normal individuals. So I have given it up as a guide to diagnosis and to treatment, and have resorted again to the empiricism of regulating the diet in such cases.

I have seen convulsive seizures of the same type as those described by Dr. Brush come on as a consequence, apparently, of a lack of exercise and excessive consumption of food, more especially proteins. I have noticed the condition in young men who had been taking athletic exercise or who had been at work and who suddenly ceased and lived an idle life for several weeks. Such patients are all cured, as regards the convulsive seizures, by an appropriate regimen in which the diet is regulated and in which exercise is made to play a part too. I have four or five such cases now; it would seem that the cases may not be directly associated with the menstrual epoch; but be coincidental with a metabolic phase which is really determined by another cause, namely, excesses in diet. The diagnosis between such seizures and those of hysterical type is very easy if one can see the seizure. The hysterical seizure is always one in which the lower neuron reactions, the pupillary reaction, and the deep reflexes are present; whereas in chemically determined convulsions the knee-reflexes and pupillary reflexes are generally absent during the convulsion.

DR. ARTHUR C. BRUSH, Brooklyn: As soon as the menstrual period occurs, the patient is put on small doses of bromid. When constipation appears, the bowels are gently moved by small repeated doses of castor oil. Large doses of castor oil and the use of saline enemas invariably precipitated an attack.

By this method it was possible to abort the attacks, and all the patients have now gone two years without having any seizures or any trouble. If this be an epilepsy, as pronounced by two men for whose opinion I have the utmost respect, then it is the most curable form of epilepsy I have ever seen. The object of my paper was to show the great conflict in opinion and authority of men on the question of differential diagnosis; this very point, however, is reacting favorably on the profession and on the neurologists. If we tell such a patient that she has epilepsy, the patient accepts that as a fact. Thereupon very likely both the patient and the patient's family are thrown into the utmost consternation. If this patient falls into the hands of a quack or some other irregular practitioner and recovers it does not react favorably on us. The suggestion as to the psychic reaction is a very valuable one, and should as far as my knowledge of it goes, work out as a careful differential point.

Dr. Williams misunderstood me. I did not mean that these seizures were directly due to the menstrual epoch, but to that peculiar bowel condition and associated glandular condition which we find in women after the menstrual epoch. A well-known gynecologist said that the only difference he ever knew in a woman during and after the epoch was that she was absolutely different. I believe that the cause of the seizures is a toxemia; they are not epileptic.

Dr. Angell, in speaking of the digestive disturbance in these patients with traumatic neuroses, did not, I think, take into consideration the fact that they are very much depressed by the unfavorable opinions given to them by physicians directly interested in the outcome of the case. Even a normal man's digestion is knocked out by prolonged sorrow and grief; and when a patient is told that he has a terrible organic nervous disease and must go to bed, it is no wonder that his intestines are upset.

Dr. Edward B. Angell, Rochester, N. Y.: The pigment ring does occur in normal health. I tried to show in the first ring what I would call the normal pigment line. My attention was first called to the value of this reaction, because it so rarely is found in health. In my earlier practice I made a great many examinations for life-insurance, and I was struck with the fact that in testing for albumin with nitric acid I did not find this marked pigment line in normal cases. It is not the presence merely of the pigment line, to which I called attention, but its pronounced character, the very deep red or brown, that is important. It simply indicates that most of these nervous patients have definite symptoms due to disturbances of metabolism, which can easily be remedied. I once spoke to Dr. Weir Mitchell about these reactions and he recalled the fact that it was his custom to put neurasthenics on a diet of skim-milk. He was quite interested in the fact that these cases cleared up when the excess of protein food was taken away from them. Furthermore if the acidity of the urine is corrected and the pigment line cleared up by the use of some salicylate and limitation of the diet for a sufficient time, the symptoms gradually disappear. This occurs uniformly. Nearly all the 800 or 900 patients whom I called toxemic have recovered. Of course, it is understood that the condition may recur, because, being a disturbance of metabolism, it may occur from time to time in the same individual. I am speaking rather of the possibility of controlling it.

Dr. Williams asked me about my control experiments. I thought that my cases of life-insurance examinations were sufficient. Furthermore, this disturbance in metabolism may be present, but is not made manifest subjectively until the individual meets some accident, business worry or family trouble that upsets him. The persistence of nervous symptoms is in reality dependent on the disturbance of metabolism. When that is corrected the symptoms disappear and gradually normal feeling is reestablished. Dr. Brush's remarks regarding the traumatic neuroses are all right, so far as the depression is concerned; yet the underlying condition in these cases, even though the neurosis is traumatic, is frequently not always due to this disturbance of metabolism. I have constantly found business men who have attributed their depression to some business trouble. But just as soon as this disturbance in metabolism, as indicated by the pigment ring in the urine, was cleared up the business worry passed away. The symptomatology depends very much on the temperament of the individual. Some patients are depressed, because they have a tendency to self-introspection. Others present more of the physical signs, such as I have mentioned, rather than the psychic symptoms.

Dr. Tom A. Williams, Washington, D. C.: Skim-milk is an unbalanced diet as regards proteins. It contains 40 per cent. of protein as against 60 of carbohydrates. How do you account for the improvement of cases under that diet?

Dr. E. B. Angell, Rochester, N. Y.: It is the limited amount of skim-milk given. If a person is not taking more than six or eight glasses of skim-milk a day, there is not very much protein taken into the system.

THREE CASES OF BUBONIC PLAGUE IN HAVANA

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The recent outbreak of plague in Havana is fruitful with epidemiologic and clinical lessons. The success so promptly attained in stamping out the disease was mainly due to the immediate public declaration of the conditions existing; not only of the actual demonstration of the infection, but even of the suspicions that preceded such demonstration. Work was commenced at once with all the vigor, the precision and the public support that can only be obtained after a frank statement of the situation.

I have contended for the following fundamental rule in sanitary practice: Work must be done in the broad daylight; the people should know what we are doing, and what to expect. If we never deceive them, they will believe what we say; we obtain their cooperation, we minimize panic, and we can begin active operations at once. All this is the most elemental common sense; but, strange to say, the general acceptance of this golden rule has been slow and difficult. Only last year the presence of cholera was concealed in several communities. Such deception was dangerous to the infected region, and, to the uninfected neighbors, it was cruel and inhuman.

Books on epidemiology and bacteriology are wont to accumulate a number of tests and proofs which health officers must verify before the diagnosis of an epidemic disease is accepted. I wish to protest against carrying these precautions too far and against the throwing out of clinical observation and circumstantial evidence. With respect to plague, for instance, the experimental proof of the inoculation of guinea-pigs is insisted on. This often produces considerable delay, for which there are many who are not displeased to find an excuse. The experimental test presents some dangers; one may not have at hand the utensils necessary to minimize this danger, and time is lost in the search for them. On the other hand one may have such cumulative evidence as will satisfy completely without the necessity of more specific proofs, which might be required under other circumstances.

It is not necessary to have an expert's familiarity with the disease for its clinical recognition. A large experience has taught me that in the diagnosis of initial cases of epidemic diseases, it is often the man who is not acquainted with the disease who is the first to recognize and to give notice of the unexpected apparition. A careful observation of the infectious diseases

normal in the community will prepare the physician for the prompt recognition of what is abnormal.

I do not wish to belittle the importance of the laboratory as a necessary aid to diagnosis in many of these diseases, but the successful sanitarian should be able to decide, in each individual case, how long he may wait for the complete bacteriologic confirmation.

Let us take, for instance, the recent outbreak in Havana, and consider the events from this point of view.

On June 20, we, in Havana, heard of the outbreak of plague in Porto Rico, an island with which we have close commercial relations. On the same day we heard of an unusual mortality of rats in a district of the city, limited to three blocks of houses consisting principally of wholesale stores of foodstuffs close to the wharves. Careful investigation into this rat-mortality showed that the district was very generally rat-proof; that the rat population was comparatively small, and that the mortality reported had commenced earlier in the month, and that, at the time of the report, the mortality had practically subsided. Orders were given, however, for the capture and destruction of rats, and none was found to be plague-infected.

On July 2 we heard that a man, who lived in one of these stores and on June 27 had left it, had died on the 30th. On inquiry we found that the physicians in charge at the private hospital where the patient was treated, on being informed of the suspicions aroused by the rat-mortality, revised the history of the case and diagnosed an acute and rapidly fatal septicemia with an enlargement of the right subinguinal glands; they expressed their belief that the case may have been one of plague.

The secretary of public health, Dr. Varona Suárez, and myself, who were making this inquiry, decided on the immediate examination of the cadaver, and the body was exhumed on the same day by Dr. Agramonte and myself. The exhumation was done forty-eight hours after death; the coffin had burst and the body was enormously bloated with a general dark discoloration. There was a bandage over the right groin. The general swelling impeded the detection of a bubo, and the place and manner of the exhumation precluded an autopsy. Punctures were made in the suspected region and some fluid obtained by aspiration. The direct and cultural examination of the fluid failed to demonstrate the presence of plague bacillus. The cadaveric flora was exuberant. Under these circumstances the cutaneous inoculation of a guinea-pig would have been indeed desirable, but we were not prepared for it.

Rat-proofing and rat destruction were continued in the circumscribed district. A thorough fumigation of the house, No. 8 Oficios Street, and also of No. 1 and No. 6 was ordered, together with frequent washing of the floors with a disinfectant solution. The same treatment, without the fumigation, was applied to the other stores in which dead rats had been reported.

Under these circumstances, a case (Case 1) suspicious of plague was reported on July 4 in our general hospital. The patient was in the fifth or sixth day of the disease; he came from a house, Mercaderes 2, three squares away from the suspected blocks. Puncture of a large purplish swelling of the left subinguinal region at a point where there appeared to be some softening brought forth a small amount of a sanguinopurulent fluid, which, on examination, revealed the presence of a small, Gram-negative, bipolar organism and irregular degenerative forms, which were in every respect morphologically characteristic of plague.

Inoculation on agar and broth gave exclusively pure cultures of a bacillus corresponding in cultural characteristics with *Bacillus pestis*. They were recognizable on the following day, July 5, and the features were distinct on the 6th. A complement reaction was made which excluded the glanders bacillus. On these findings the case was pronounced plague, and notice of the fact was given to the neighboring governments.

In my opinion, to wait any longer would have been a mistake.

Cases 2 and 3 came from the originally infected zone, No. 2 Baratillo Street (Fig. 1). The patients were taken sick on the 8th and 14th respectively. No other case occurred.

The diagnosis was made in these two cases as soon as a local lesion could be found to furnish material for a bacteriologic examination. Pure cultures of *B. pestis* were obtained from a slightly enlarged subinguinal gland in Case 2, and a mixed culture in Case 3. I believe that no further procedure was necessary for our guidance in the work of extinction of the focus.

After the subsidence of the immediate danger of spread of the epidemic, we carried out the cutaneous inoculation of guinea-pigs with cultures from the three cases and obtained the characteristic lesions, the buboes and the speckled spleen, and found the bacillus in the organs.

I believe we should look on the infection in Case 1, which occurred outside of the district, as accidental. A focus was never created at No. 2 Mercaderes Street. Dead rats were never found. The man was in charge of a small stable; his habits were uncleanly, and he lived in the stable close to the forage he used for his animals. He was very sure that he had not recently visited the infected area. It is reasonable to believe that a plague rat had been carried in the forage and had become the source of the infection. At any rate, no other evidence of contamination appeared in that house, a large building with many offices, and rooms occupied by families, either before or after the invasion of the first case.

Figure 1 gives an outline of the infected area and adjoining blocks. The shaded portion indicates the area of rat-mortality. The numbers correspond to the street numeration and are indicated only for the houses in which events of interest are recorded.

REPORT OF CASES

CASE 1.—*History.*—The patient, V. M. G., Spaniard, aged 47, stablekeeper, lived in a small stable at Mercaderes 2. He was thin and bony and was taken sick June 29 or 30 with fever, vertigo, vomiting and heaviness and pain in the legs. He lay in the stable until July 2, when he was sent to the general hospital. He had high fever of remittent type. There was no evidence of venereal disease or of ulcer or excoriation in the limb. On July 4 suspicions were aroused in the resident physician, Dr. Mignagaray, by the discovery of a painful bubo in the left subinguinal region. The swelling had appeared, to the patient's knowledge, on the day of admission. The pulse was weak and frequent. The face was pale, but the eyes were somewhat injected. The tongue was white. There was an extensive area of infiltration in the femoral region, which extended somewhat into the inguinal; the surface was distinctly raised and purplish; to the touch the mass was doughy, though not soft, something like the hard edema of myxedema. The glands were scarcely distinguishable one from the other and the whole indurated area faded into the surrounding tissue with borders that were not very distinct.

The results of the bacteriologic examination have already been given.

The patient was transferred to Las Animas Hospital, our isolation hospital, and placed under my care on July 4. His condition was grave. There was considerable excitement and active delirium; he was pugnacious, struggling to get up and away. The pulse was very weak. These symptoms were benefited by the use of small doses of laudanum. No other medication was given and the patient was kept on a milk diet.

The femoral bubo was opened on July 13, the sixteenth day of the disease, when a slight secondary fever began to show itself. No plague bacilli were found at this time in the pus, by the direct examination or by cultural methods. Subsequently the inguinal bubo had to be opened. The healing was not completed until August 20 and was accompanied with frequent daily elevations of temperature, not exceeding 0.5 C. The patient was discharged on August 24; there was still some induration left, and he was given some light work about the hospital.

Treatment.—The patient was treated in an ample room with large windows screened against mosquitoes and flies. The windows were kept constantly open. Blankets, wet with mercuric chlorid solution, were spread on the floor about the bed. The cement floor was also kept moist with a disinfecting solution. A large tub, half filled with mercuric chlorid solution, close to the bed, received all clothing from the bed and from the patient. Dressings from the wound were thrown in a hand basin half filled with the same solution. The excreta were mixed with a disinfectant. The actual dressing of the wound was done with rubber gloves.

The nurses and attendants wet their hands in bichlorid solution when entering the adjoining room; they put on white gowns and then wet their hands again before and after attending the patient. On leaving the room the gowns were thrown into the tub. After washing their hands, which had been kept constantly wet, such attendants could mix with the others, and they were even permitted to visit their friends after changing their clothing. Caps which opened behind and fell over the head to the shoulders, with a celluloid window in front, had been prepared.

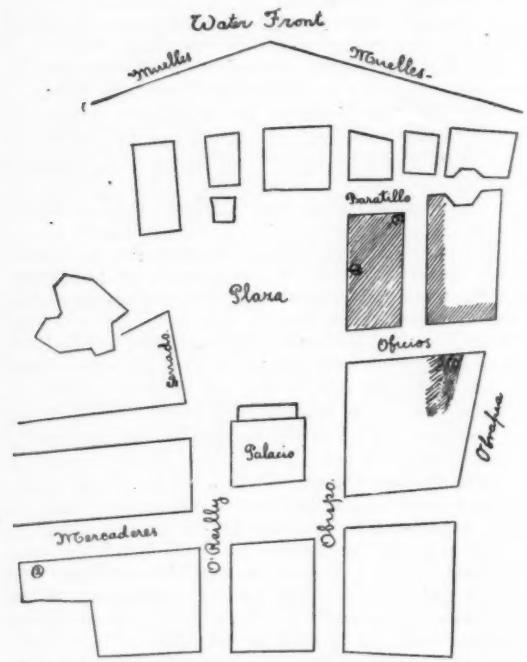

Fig. 1.—Outline of infected area and adjoining blocks. The shaded portion indicates the area of rat-mortality. The numbers correspond to the street numeration and are indicated only for the houses in which events of interest are recorded. No. 8, Oficios Street, probably the first case (cadaver exhumed); No. 2, Mercaderes Street, first case confirmed; No. 2, Baratillo Street, second and third cases; No. 7, Obispo Street, barber-shop in which the rat-mortality was most striking.

CASE 2.—C. H., Spaniard, aged 28, of robust constitution, lived and was employed in handling merchandise at No. 2 Baratillo street. He was taken sick July 8 in the morning with chilly sensations, headache and vomiting. He was admitted to a private hospital on the 9th and was placed at once in the isolation ward. He was seen by the health commission on the 10th. We found the face congested, the expression dazed and the lips slightly livid. He answered questions well, did not complain of any pain and did not appear to be very ill. The tongue was pointed and red at the borders and center; the coating over the rest of the surface was very white. There was slight enlargement and tenderness of one of the subinguinal glands on the right side. The pulse was soft and dicrotic. On the morning of the 11th, although there was a fall in temperature there was no marked change in the general condition except that the patient was nervous and ataxic. The gland was enlarged to the size of a small walnut; it was hard, movable and distinct from the others; there was slight redness of the skin. By puncture of the gland with a hypodermic syringe we obtained on the 11th a drop or two of liquid containing a few leukocytes, and a very large number of bipolar bacilli, corresponding morphologically with the

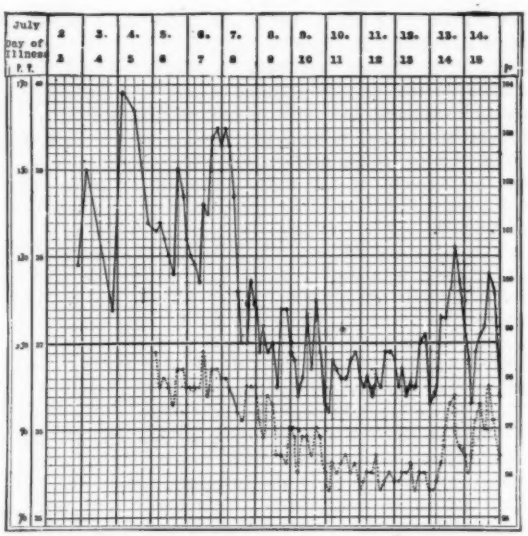

Fig. 2.—Temperature and pulse chart of Case 1.

plague bacillus. There was no venereal affection of any kind, or any lesion of the skin. The diagnosis of plague was made. The patient died at 6:30 p. m. rather suddenly, with high fever, dyspnea and cyanotic discoloration. The mind was clear to the last. When seen in the morning we had found nothing that could suggest this early collapse. The blood had not been examined with a view to find the plague organism. Cultures made from the small amount of fluid obtained from the gland were found forty-eight hours later to be pure cultures of *Bacillus pestis*. A guinea-pig, inoculated by the cutaneous method with these cultures some weeks later, died on the seventh day, showing the characteristic lesions of plague. The bacillus was recovered from the body of the pig.

CASE 3.—J. E., Spaniard, aged 21, of robust constitution, lived and was employed in handling merchandise at No. 2 Baratillo street. He was taken sick on July 14 with vomiting, fever and vertigo. He was admitted to the private hospital July 15. The general appearance, the tongue, the injected eyes were very similar to the conditions found in Case 2. The patient complained of severe headache and some pain in the limbs. The mind was clear. He did not seem to be seriously ill. The

groups of glands were slightly enlarged in both groins, a little more on the right side perhaps, but not more than is generally found in men who work hard on their feet. He was seen by the health commission on the 15th, 16th, 17th and 18th. The glands became rather smaller; the other symptoms continued about the same. The blood did not agglutinate the typhoid bacillus. If we except the appearance of the tongue, which was pointed and covered by a fine, but very white coating, the case resembled one of mild typhoid fever. There was no distention of the abdomen and no diarrhea. During the first six days there was some evidence of bronchitis. The spleen was enlarged. On the 18th the commission made a negative diagnosis of plague; the patient was kept under observation in the isolation ward. On the 19th there was some delirium, and on the 20th I had a second examination of the blood made for plague and for the typhoid agglutination. Both were negative. On the 21st there was adynamia and delirium. The subinguinal gland, which had been slightly enlarged at first, became somewhat larger, about the size of a large filbert, though still hard. On the following morning the gland was punctured with a hypodermic syringe. Later in the day a small dark-colored boil was detected below the left popliteal space. The direct examination of the fluid obtained from these lesions revealed the presence of a characteristic bipolar bacillus, much more numerous in the small carbuncle. A red spot near the right elbow indicated the formation of another small carbuncle. Mixed cultures were obtained from both lesions with some characteristic colonies of *Bacillus pestis*. Some weeks later this diagnosis was further confirmed by the cutaneous inoculation of a guinea-pig. On the 22d, the 23d and 26th, the attending physician administered antiplague serum of Yersin. The swollen gland grew somewhat larger, but there never was any evident extension of the inflammatory process to the periglandular tissues. A polymorphous eruption, with formation of some pustules, appeared on the 23d. The patient died in an adynamic state on the 27th.

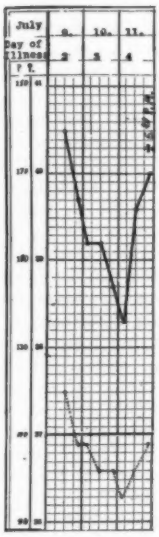

Fig. 3.—Temperature and pulse chart of Case 2. Patient died at 6:30 p. m. on the fourth day of the disease.

While Cases 1 and 2 may be considered as exemplifying different types of the disease, Case 3 is very instructive as an anomalous type. It shows that a fatal case of plague may develop slowly during several days without any alarming symptoms and without any sufficiently evident local manifestations.

The health commission several times mentioned in the course of this paper is a permanent board, originally appointed for the diagnosis of cases of yellow fever, which, at present, is called for the determination of cases of infectious diseases of doubtful nature. During the present epidemic the commission examined all cases which were reported as suspicious of plague. Our experience has been of great interest. We were accustomed to see chiefly cases of gastrohepatic disturbances and infectious jaundice, as well as imported cases of malaria. The picture displayed before us at the present time was quite different. We had cases of lymphangitis and erysipelatous inflammations with involvement of the lymphatic glands; cases of filaria with fever; pustular and purpuric eruptions; grave cases of staphylococcic infection; gonococcic infection; one case of rapidly fatal malignant edema, following vaccination; and several cases of typhoid and paratyphoid with enlarged inguinal and subinguinal lymphatic glands. These are frequent in the laboring classes, especially among men who work in ditches and excavations for our new sewer system.

The value of the experience acquired by a permanent and carefully selected board of this kind cannot be too highly appreciated in public health work against epidemic diseases.

At present, September 4, it may be assumed that the plague infection has been completely extinguished in Havana. This rather unexpected and unusual success may be attributed to other causes besides the one mentioned in the beginning of this paper, namely, the prompt and frank declaration of the situation with the consequent facilities for the most energetic action from the start.

Second to, if not even more important than, this factor of success, is the new sewer system. All the establishments, stores, etc., in the suspected area, were connected with the modern, closed, sewer system. This

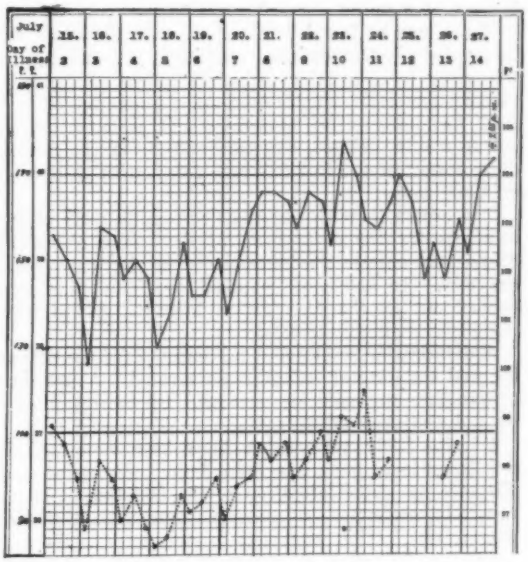

Fig. 4.—Temperature and pulse chart of Case 3. Patient died at 7:45 p. m. on the fourteenth day of the disease.

change, with the new block pavement of the streets, and the establishment of modern sanitary plumbing, had reduced very decidedly the rat population of the district; in fact, rats were scarce where a year ago they were a serious pest. A portion of the old sewer is still used as a rain-water drain, but it extends from the water-front along Obrapia Street only as far as Oficios Street, where it is closed. The rats, therefore, could not be driven by our sanitary measures into other portions of the city. Probably they were mostly driven toward a vacant lot full of rubbish and ruined walls opposite No. 2 Baratillo Street. This lot was carefully screened and inundated during several days.

On June 25 the examination of rats was commenced. On July 2 we had started active operations against rats in the district, by poisoning, trapping, closing rat-runs, washing floors and fumigating with sulphur. It is probable that we destroyed the infected rats which were left from the limited epizootic.

The infected fleas which produced the two cases in Baratillo 2 were soon destroyed by thorough and repeated sulphur fumigations of the premises.

Many of the stores in question were first-class establishments, with cement floors. The personnel occupied excellent quarters in the second stories. They were cleanly in their habits, and took a daily shower-bath after working hours. They were all subscribers to the same private hospital and we were immediately informed by our inspectors of every case of sickness.

Our system of inspection and reporting of all suspicious cases throughout the city was very thorough. We had the best support from the profession and we were well prepared by our past campaigns against yellow fever.

The same kind of preparation was reflected in the response of the people to our exigencies. I doubt if there ever was such activity displayed by property-owners as was shown here in Havana to render an extensive business section rat-proof. More slowly but surely we have been improving our system of household disposal of garbage by enforcing the ordinances as to the use of metallic, covered containers.

Flaws may be found here and there in the work, but its general effectiveness was exemplary. A general order was given to clear all premises of rubbish, refuse and used-up material. For many days the amount of such stuff, including street sweepings and garbage, carried out to sea in lighters, was increased from the normal daily output of 450 to 2,000 tons a day, with an average of 1,500 tons.

The orders to wash out the floors daily with phenol solutions for the destruction of fleas were cheerfully obeyed, not only in the infected district, but throughout the city. In the more exposed localities they were carried out by the disinfection brigades, whose work cannot be too highly praised.

A deratization service and rat brigades for the poisoning and trapping of rodents were created. A premium of five cents was paid for each rat. Up to September 3 we had destroyed 17,974 rats.

Of the 8,909 rats which have been examined in our laboratory, none has been found plague-infected. Kitasato has called attention to the fact that it is not rare to have summer epidemics of plague without finding plague rats. This was also in our favor. The flea population of rats is at its lowest in the tropics during the month of June. I have been cultivating the *Loemopsylla cheopis,* the common rat-flea in Havana, in my laboratory at Las Animas Hospital for several years, and I have shown the decrease of their population during the summer months.

A detailed report of the bacteriologic work in connection with these cases will be published by Dr. M. G. Lebredo, who was in charge of that part of the work. The reports of other heads of departments will be published also in *Sanidad y Beneficencia,* the official organ of the Department.

Award of Nobel Prize to a Vivisector.—What have the anti-vivisectionists, those sentimental and insatiable liars, to say of the award of the Nobel prize to Dr. Alexis Carrel, of the Rockefeller Institute? A year or so ago they were attacking Dr. Carrel with their heavy artillery, accusing him of all sorts of incredible cruelties and bringing up charwomen and elevator men as expert witnesses against him. But now he gets $39,000 for his successful experiments in suturing blood-vessels and transplanting organs—*all of which experiments were performed on animals.* Can it be that the trustees of the Nobel fund are also scoundrels? Or can it be that they refuse to believe the balderdash of silly old women, male and female?—Baltimore *Evening Sun.*

THE TREATMENT OF PAPILLARY TUMORS OF THE URINARY BLADDER WITH THE HIGH-FREQUENCY CURRENT (OUDIN)*

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NEW YORK

My object in writing this paper is to call attention once more to this new method of intravesical treatment and to bring together many of the facts that surgeons working along these lines have acquired. To prepare an up-to-date report I have resorted to the old expedient of sending letters to all the surgeons who might be using this method of treatment. A large number have answered my questions and I take great pleasure in thanking them publicly.

I. EXTENSIVE USE OF THE NEW METHOD

All the answers that I received I have tabulated. Almost all the answers were enthusiastically favorable to the new method. One or two answers were favorable, but not particularly enthusiastic, as can readily be seen by consulting the tabulation. One answer was far from favorable, but in view of the fact that the surgeon in question had never used the method, I think we can pass over his remarks.

About 183 cases have been treated. These were cases of intravesical papilloma. In addition, more than twenty cases of urethral papilloma (not included in the tabulation) were treated by the surgeons. Thus their opinions are based on more than 200 cases in which they have tried this new therapy. This naturally represents more than 200 tumors, as in many cases there were multiple growths.[1] I shall not analyze the table in detail. I should like to call attention, however, to the answers to Questions 5 and 6. The unanimity of opinion that this new method is simpler and superior to previous methods is most striking and surely speaks well for the high-frequency current treatment of vesical papillomas. While over 200 cases have been treated in the United States, surgeons have begun to use the method in France, Germany and Austria. Up to date I have heard of twenty-eight cases treated in Europe (Heitz-Boyer of Marion's clinic, R. Kutner, R. Bachrach of Zuckerkandl's clinic). All are enthusiastic about their results. Heitz-Boyer uses a slight modification of the original technic, which I believe is less effective. The others use the same technic as we use in America.

II. TECHNIC

In previous papers[2] I have described the simple process under discussion and shall not repeat the details. Certain points in the technic I would, however, like to touch on.

The electrode which is purchasable at present is not so satisfactory as the original electrode, and I have been trying to persuade the Wappler firm to have the original

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* Read in the Symposium on Treatment of Tumors of the Bladder in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

* Because of lack of space this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter including the table referred to in the text will be sent by the author on receipt of a stamped addressed envelope.

* From the Mount Sinai Hospital, Genito-Urinary Surgical Service.

1. In my twenty-five cases I had to treat more than forty papillomas.

2. Beer, E.: Removal of Neoplasms of the Urinary Bladder, THE JOURNAL A. M. A., May 28, 1910, p. 1768; Die Behandlung von gutartigen Geschwülsten, etc., Centralbl. f. Chir., 1910; Treatment of Tumors of the Urinary Bladder, etc., Ann. Surgery, 1911, N. Y. State Jour. of Med., October, 1911.

wire manufactured again. This was firmer and of smaller caliber than the present output. It was very durable. Some of it I am still using, fully three years having elapsed since it was made. I have the impression that copper wire is a more efficient electrode than steel. The extensive necrosis produced by using copper electrodes I have failed to see when using the steel electrode. Whether or not this is accidental, I cannot definitely state.

I am inclined to think that development along these lines of therapy will be in two directions. Experiment may demonstrate that other metal electrodes will be more effective than the original copper one. Experimentation with different mediums may evolve a medium which is better than distilled water. To what extent the use of the bipolar current will displace the unipolar, we must reserve final judgment. In view of the fact that the D'Arsonval current has much less cauterizing and electrolytic action than that shown by the Oudin current in experimental work on organic tissues, I doubt whether it will displace the Oudin current to any degree.

III. NATURE OF THE GAS PRODUCED DURING THE TREATMENT

According to Oudin (Heitz-Boyer, Fifteenth Session of the French Urologic Association, 1912) this current produces no electrolytic phenomena. This categorical statement does not harmonize with the facts that we observe. Gas is regularly produced when contact with tissues is effected. No gas is produced when the current runs off into water. The production of this gas is evidence of electrolytically induced chemical change. As I have stated before, this gas appears to be hydrogen when produced outside of the body. I have never been able to collect it from patients during treatment. By accident, however, I happened to obtain a reaction within the patient's bladder which leads me to think that the same gas is produced in the cases under discussion. In a patient with papilloma of the anterior wall of the bladder I noticed a sharp explosion while the current was running. The explosion, which did no harm, was similar in every way to the detonation that takes place when the gas collected over a treated piece of meat in a test-tube is ignited with a match. The oxygen in the air-bubble which was close to the papilloma probably combined, under the influence of the heat engendered by the current, with the hydrogen produced by the treatment.

The observation that the copper electrode seems more effective than the steel suggests that, in addition to cauterization by heat, and in addition to the electrolytic action, there is a possible third factor underlying the phenomena that we are studying.

IV. PAPILLOMAS IN CYSTITIS

A fourth point to which I wish to call attention is the existence of a type of papillomatous growth that is very difficult to treat successfully, even though the growth is readily accessible. I refer to those cases associated with very severe cystitis. In those the papillomas are often in part necrotic and Nature seems to be unable to throw off the more or less completely necrotic villi. Why this should be I do not know. These may be cases of pseudopapilloma or proliferative papillomatous cystitis, and until the cystitis or its cause is done away with, a cure by the high-frequency current is not obtainable. These cases I have found the most obstinate.

V. SELECTION OF CASES FOR HIGH-FREQUENCY TREATMENT

A fifth and last point that I wish to emphasize is most important, namely, the selection of cases of bladder growth that should be treated by the high-frequency current method. I am convinced, after careful trying out, that no malignant growth[3] will be cured by this method. Consequently we must determine as soon as possible whether we are face to face with a benign or a malign growth. At times this is fairly easy, but usually it is very difficult. Of eighteen cases that I have been able to study microscopically, only six showed carcinoma and judging from the microscopic and clinical behavior of the other twelve, I feel certain that the reliability of the microscopic test cannot be impugned.

To obtain specimens for microscopic study I have used different methods. Often at the first examination and treatment a fair-sized piece of tumor can be burned off and removed attached to the electrode or recovered from the washings. Straining of the urine after treatment has in three cases given me pieces of adequate size to make a positive diagnosis of malignancy. In some cases one can evacuate through the cystoscopic sheath, at the first examination, large amounts of tumor tissue which suffice for microscopic study. When all these methods fail, I regularly use Young's rongeur at the second sitting and bite out a large piece which is always satisfactory for microscopic study. Recently I have determined the presence of carcinoma four times by specimens so obtained. If all these methods of obtaining tissue fail, a careful and experienced worker will be able to decide from the lack of clinical result that he is dealing with a growth that does not respond; in other words, he is dealing with a malignant growth. This delay, I am convinced, should be avoided, as early operative excision alone can cure such cases. Early diagnosis of the nature of the growth is therefore absolutely necessary.

Having put aside all the malignant cases, I believe we should try out the high-frequency current in all cases unless the tumor is inaccessible or the patient too intolerant. The size of a growth or the multiplicity of primary growths (non-recurrent) I consider no contraindication. There are, however, recurrent multiple growths in which the whole bladder wall is studded and in these no therapy short of complete cystectomy will lead to a cure. In this type of case the patient will have to decide, as the surgeon offers him but little.

In closing I would like to emphasize these points:

1. The results of operation up to date, in many hands, have been most satisfactory.

2. All cases should be studied microscopically and all malignant cases excluded from the therapy in question.

48 West Seventy-Fourth Street.

3. The only exception I might make would be very small growths that are superficial.

Extermination of Flies in Bohemia.—The United States consul at Prague, Bohemia, reports that the common fly has been practically exterminated from Bohemia. "Screen doors to keep out flies and other insects are unknown. The buildings are all constructed of brick, stone or concrete. The docks along the river front are of granite. The pavements and sidewalks are made of granite blocks. There are no wooden sidewalks, stairways or buildings. Decayed matter is not exposed, and the streets are frequently cleaned each day. There are no open drains in the city to attract and breed flies. I can only ascribe the absence of flies to the lack of breeding-places."

CANCER OF THE BLADDER *

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BOSTON

A year ago I published an account of an early case of carcinoma of the bladder which Dr. Chute and I removed by the transperitoneal route. The so far successful outcome of this case has encouraged me to present a brief summary of this condition in order to bring up several points for discussion in regard to cancer of the bladder; also to endeavor to sum up the results so far obtained by the transperitoneal operation.

In this presentation the term "cancer of the bladder" is intended to apply to that type of new growth which is early infiltrating and which requires the resection of a greater or less portion of the bladder wall for its removal; it does not apply to that form of prostatic growth which may simulate so closely cancer of the bladder.

Cancer of the bladder occurs as a primary sessile growth which originates in the mucous membrane and is infiltrating from the start, or as the degeneration of the base of a more or less pedunculated papilloma. It is with the first condition only that I shall deal. The secondary involvement of the bladder from the extensions of a carcinoma from a neighboring organ should not be considered in this connection.

PATHOLOGY

The bladder mucous membrane being normally free from glands, the commonest form of carcinoma is one made up of solid atypical masses of epithelial cells infiltrating the bladder wall. Occasionally, however, the carcinoma takes the form of an adenoma; it being evident that an adenoma cannot develop from a mucous membrane in which there are no glands, this unusual form of tumor must arise from strayed urethral or prostatic glands or from an embryologic occlusion of a portion of rectal mucous membrane. The rare type of mucous cancer of the bladder which has been described a few times is supposed to arise in this way. Microscopically this form of cancer corresponds exactly to the mucous cancer occurring in the rectum. The cells, instead of appearing as solid masses, take the form of alveoli. The epithelial cells lining these alveoli are typical mucous cells. These alveoli which become distended with mucus occasionally rupture and pour their contents into the adjacent tissue. Clinically this form of cancer does not differ from the ordinary carcinoma, but it is of interest in that it has been so rarely described, the only one reported so far in this country to my knowledge being a case in which Dr. Chute and I operated, which was reported before the New England Urological Society by Dr. A. H. Crosbie of Boston. Most of the other cases have been reported by German observers.

Cancer of the bladder occurs most often in men over 50, is generally situated at the base of the bladder, often in close relation with the ureter openings, and is the most common form of bladder growth.

METHOD OF EXTENSION

The method of extension in carcinoma generally occurs as an infiltration of the various coats of the bladder, which later penetrates into the adjacent structures. This extension sometimes occurs to an amazing extent in advanced cases. Extension also takes place through the lymphatic channels, but is notably slow, the iliac and lumbar glands becoming involved. The process seldom goes beyond these. Remote metastases are rarely seen. That extension by contact takes place is shown by the recurrences of the neoplasm at the site of previous operation wounds and by the development at points of contact of the mucous membrane and the growth when the bladder is empty. These methods of extension are of importance in relation to the operative treatment.

SYMPTOMS AND DIAGNOSIS

There is nothing in the symptomatology to distinguish this type from any other neoplasm in the bladder. Hematuria is said in general to be less copious in these infiltrating growths; this is purely relative, however, and no dependence can be placed on it in any individual case. Pain, although a common symptom of this type of growth, is by no means constant, as extensive involvement without infection of the movable portion of the bladder may occur with practically no pain. The most striking thing here, as in other forms of bladder growths, is the great irregularity in the symptoms. Cases at times present a perfectly typical train of symptoms of terminal painless hematuria, uninfluenced by rest, etc., while others present symptoms which vary to a marked degree, there often being long intervals between the attacks of hematuria, which may be slight and of short duration. Thus, the time between the appearance of symptoms and the first observation by the surgeon is variously reported as between the extremes of six weeks (as in my own case) and thirty-two years. Another interesting point in this connection is the comparatively long time that may elapse between the appearance of the first symptoms and the extension of the growth outside the bladder.

Accurate diagnosis as to the size, number and position of these growths can be made only by cystoscopy. In general, the early cystoscopic appearance of a bladder carcinoma is that of a slightly elevated tumor of a more or less papillary appearance with elevated indurated edges and a central ulceration of a greater or less extent. The more advanced picture of the more prominent fungating growth with secondary changes of necrosis and ulceration incrusted with urinary salts is characteristic. The question of malignancy, however, cannot be definitely decided by this means; in general, a flat sessile appearing growth is more than suspicious of malignancy as is also any induration by rectal or vaginal palpation. Persistent pain is more common in the advanced stages and suggests that the process has advanced beyond the bladder.

In order to bring out certain points that I wish to make it may be well to state briefly the history of the case mentioned at the beginning of this paper. The patient was a man of 46 with no venereal or other illness of importance. Six weeks previous to operation he began to pass urine more frequently during the day and had to get up once or twice at night. After one week of this increased frequency he noticed a few drops of blood at the end of micturition. This occurred each time, was painless and uninfluenced by rest or motion. Cystoscopic examination showed a slightly elevated area, with a granular or papillary appearance, covered more or less with what seemed to be a yellowish white slough. This was excised with a good margin of healthy tissue by the transperitoneal route, the entire thickness of the bladder wall being included in the resection. The

* Read in the Symposium on Treatment of Tumors of the Bladder in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

pathologic examination showed ulceration of the mucous membrane in the central portion of the specimen; only in a few places had the basement membrane disappeared and the epithelial cells begun to infiltrate the submucous layer, and in no place had the process gone beyond this layer. Cystoscopic examination made a few days ago, thirteen months after operation, showed a perfectly normal bladder with a small smooth white scar at the sight of removal of the growth. There were no symptoms. The urine was clear. From the pathologic report in this case it may be inferred that there was a time when this growth was not malignant. Of course, it is impossible to estimate how long it had been present before the symptoms were brought on by secondary ulcerative changes. Still, the time elapsed is unusually short.

In a series of eighty-nine partial resections of the bladder for cancer,[1] there were but eight in which the time from the beginning of the disease was as short as from one to six months. Other cases of short duration of symptoms previous to operation are reported from the Mayo clinic; one case of five, one of six and one of seven weeks. The amount of infiltration present in my case was also remarkably slight. Whether we shall ever be able to recognize these growths in a precancerous stage, or rather recognize bladder conditions which may give rise to them, remains to be seen; certainly it is a strong incentive for early investigation of urinary symptoms.

TREATMENT

At present, the only treatment is surgical; in the early cases, complete removal, in the more advanced, some form of palliative operation. The intravesical operations are unsuited to this type of growth with the exception that relief from hemorrhage and other symptoms has been reported in some of the advanced, fungating cases by use of the high-frequency current.

The results of surgical treatment of the bladder by means of the suprapubic route have been notably unsatisfactory and disappointing in the past. Rafin reports ninety-six cases of partial resection for cancer by this method with a mortality of 21.8 per cent. In fifty, in which the end-results were known, there were but five reported cures of over three years' duration, only 10 per cent., and a high mortality. In regard to this seemingly high operative mortality, I think we may safely infer that this series probably included cases which on account of their advanced, local or poor general condition were poor operative risks. Of course, the increased difficulties of operating through a small space may have contributed no little to the mortality.

Transperitoneal cystotomy is now on a well-recognized basis, having been performed a number of times for various types of bladder tumor with excellent immediate operative results, occasionally in the presence of an acute bladder infection. This latter condition, while not a definite contra-indication, is, of course, undesirable and must increase the gravity of the operation. A moderate bladder infection is undoubtedly present in the great majority of the cancer cases.

As yet there have been but few cases of transperitoneal cystotomy for cancer reported. I am indebted to Dr. J. G. Thomas for the following figures from the Mayo clinic. They have operated on twenty-nine patients by this route since 1907 with the following results: There were three operative deaths, one from nephritis, one from extravasation after an extensive resection and one from intestinal paresis. There were nine remote deaths, the time varying from two to forty-seven months in six of them; in the other three the time was not stated. One patient was not heard from. Sixteen are reported as being well at the present time; of these, three were operated on five years ago; two, four years ago; two, three years ago; three, two years ago, and six, one year ago. In this series, which included a case of extensive resection, it will be seen that the operative mortality is almost 10 per cent.

That transperitoneal cystotomy is the operation of election for all cases of cancer of the bladder in which radical cure may be attempted, except those so extensive as to require total cystectomy, is borne out by the following facts:

1. The bladder may be freely opened. As the majority of these growths occur at the base and on the lower lateral walls they are more readily accessible.

2. If the ureteric orifice is involved, which is not infrequently the case, reimplantation of the ureter can be more easily accomplished.

3. The entire thickness of the bladder wall may be resected without handling the growth.

4. The operative mortality is low.

The technic of transperitoneal cystotomy is well known. In this connection there are but one or two points that I wish to make. One of them is the advantage of placing three or four sutures about the growth in such a way that the landmarks will be preserved and the bladder wall steadied and that the growth may be excised between these points with a good margin of healthy tissue without being handled. If the growth is in close relation to the ureteric orifice, a ureter catheter *in situ* will be of great assistance. If the resection has been extensive it is my opinion that the bladder had better be put at complete rest for a while. This is, I think, best accomplished by extraperitoneal suprapubic drainage. Infection, which is particularly undesirable in these malignant cases, is much less liable to occur by this method than when urethral drainage is used, although the in-lying catheter may have to be employed later on to hasten the closure of the suprapubic wound. With proper technic in walling off the intestines and careful suture of the bladder, drainage of the peritoneal cavity is not necessary.

A patient recently operated on in the genito-urinary service at the Massachusetts General Hospital illustrates very well some of these points. The only drainage employed, with the exception of a small rubber tissue wick in the prevesical space, was a suprapubic tube, which was removed on the fifth day. On the twelfth day a catheter was put into the urethra, which remained three days. After the fourteenth day there was practically no leaking from the wound. The patient left the hospital twenty-three days after the operation.

Should the growth involve both ureters or be so extensive as to require total cystectomy, the two-stage method proposed by Watson should be employed. This consists of a preliminary bilateral nephrostomy, thus permanently diverting the urine, the cystectomy being performed at a later date.

There is another class of patients, however, who at the time they present themselves for treatment are clearly unfit for an attempt at radical cure, either because of the extent or immobility of the growth or because of their poor general condition. Just what form of palliative treatment should be adopted must be decided by the individual indications.

1. Rafin: Tr. French Urological Assn., 1905.

Dr. H. Cabot[2] divides these cases into two general classes:

1. Those in which operations can be undertaken early before infection has taken place and in which, therefore, there is the possibility of prolonging life.

2. Those in which operation is undertaken after extensive infection has occurred and in which operation is purely for the relief of symptoms.

In Class 1 it would appear that palliative treatment is of value and will prolong life under the following conditions:

1. When the disease is in a comparatively early stage, although the location or depth of infiltration makes radical cure impossible.

2. When infection of the bladder is slight or entirely absent.

3. When infection of the upper urinary tract is absent.

Cases in which the disease has extended beyond the bladder will not be benefited. In general, the operation consists in the removal of the mass by curet and cautery, and in an attempt at a prompt closure of the suprapubic wound.

In Class 2 the treatment consists in simple suprapubic drainage, which will relieve the distressing symptoms of the later stages of the disease.

Cases will occur at times in which it will be impossible to tell previous to operation whether or not a radical removal can be attempted. Under these circumstances an exploratory suprapubic cystotomy should be done and the growth examined as to its extent and mobility; then if radical excision seems advisable it can be done by extending the operation to the transperitoneal route. It is evident that the only hope of obtaining good results in the treatment of this condition lies in early diagnosis.

Notwithstanding the fact that the symptoms of bladder tumor are exceedingly irregular much may be accomplished by attention to early, and to some seemingly, trivial symptoms. The importance of these early urinary symptoms is well recognized by genito-urinary surgeons, but that their importance is not generally recognized is shown by the long-continued treatment of the bladder for "cystitis," so often seen in cases of renal tuberculosis and a variety of other extravesical lesions.

When we know that a slight hematuria of short duration may mean so serious a condition as cancer of the bladder, it is our duty to point out as strongly as we can the importance of investigating all cases of symptomless hematuria. Then, and then only, may we hope to attain better results in the operative treatment of cancer of the bladder.

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RESULTS IN THE TREATMENT OF TUMORS OF THE URINARY BLADDER *

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The surgical treatment of tumors of the bladder is surrounded by a host of difficulties. Chief among these are to be mentioned, first, the importance of preserving the anatomic relationship; second, the complications arising from the multiplicity of tumor types, and third, the inaccessibility of the lesion.

The anatomic relationship must be preserved in order to maintain function. It is necessary to preserve the orifice into the bladder for the ureters and, if one or both of them be destroyed, one or both of the ureters must be transplanted so as to enter the bladder at some other point. It is also necessary to maintain the normal outlet with its muscular mechanism and power of urinary control.

While most tumors of the bladder are papillomas, they occur frequently in multiple form. Usually there are one large and several small tumors. The large tumor is apt to overshadow the smaller tumors, one of which may easily escape notice. Recurrence of papillomas is seldom local, but is often seen in a different quadrant of the viscus. Cells brushed off in removing the tumor are prone to engraft themselves on any tissue with which they come in contact. Recurrence as a fringe about the orifice of the urethra is also common, and this is probably explained by cells which have been left free in the bladder and which were forced against the mucous membrane at this point by the contractions of the organ. Too much emphasis cannot be laid on the importance of a careful search of the entire floor of the bladder for minute papillomas after the large tumor has been removed, and of the importance of the complete removal of all cells adjacent to the large and small areas of neoplasms.

A large percentage of the tumors of the bladder occur in the base or on the wall close to the base at or near one of the openings of the ureters or of the urethra. These positions render the lesions extremely inaccessible to the surgeon, and make their treatment most difficult with a high percentage of recurrences.

Up to the present we have examined in our clinic 114 cases of primary tumors of the bladder. Eighty-four were in males and thirty in females. One patient was under 10 years of age, and one over 80. The greater number were between the ages of 40 and 70; the average age was 53.1 years.

We have classified these tumors, according to the clinical course, into benign and malignant. In the group of benign cases are included fibromas and myomas. Only two of the 114 cases in our series belonged distinctly to this group, and these were fibromyomas. In the group of malignant cases we have included papillomas and carcinomas.

Estimated from a clinical point of view, all papillomas are malignant, though one type of papillary tumor may be histologically malignant at the onset while another type may early show no evidence of invasion of the surrounding tissues. All types of papilloma have the power to recur and also to destroy life, in the same manner as the recognized malignant tumors. In all probability if the patient lived long enough all papillomas would become histologically malignant.

In twenty-two of our cases more than one-half of the bladder was involved and in four it was completely filled with the tumor.

METHODS OF TREATMENT

The method of operative procedure and treatment must be determined (1) by the general condition of the patient, (2) by the cystoscopic findings. Arteriosclerosis, renal insufficiency, myocarditis, etc., are factors contra-indicating radical procedures. Bimanual examination by vagina in the female and by rectum in the male is most important in the diagnosis, as thus we may

2. Cabot, H.: Tr. Am. Assn. Genito.-Urin. Surg., 1907, ii, 301.

* Read in the Symposium on Treatment of Tumors of the Bladder in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912

be able to determine the presence and extent of induration. Many times cases will be eliminated in which otherwise operation might be attempted.

The cystoscopic examination is most important not only in determining the number, location and extent of the lesions but also in helping to differentiate a bleeding hypertrophied granulating surface from a true neoplasm. This benign granulating surface is often seen in prostatic hypertrophy, cystitis and particularly in tuberculosis. It is also present in cases in which tumors and inflammatory masses are pressing into the bladder from the outside. A stone in the lowest point of the ureter will sometimes force the mucous membrane at the meatus out into the bladder, thus giving the appearance of a tumor. An *x*-ray picture will usually differentiate this condition.

When possible it has been our custom to excise, through the cystoscope, a specimen of the growth large enough for a microscopic examination. This procedure is valuable in differentiating cases of benign hypertrophies and inflammations of the mucous membrane from the vesical tumors.

If there be palpable metastases or considerable induration in the base of the bladder the case should be considered inoperable. If there be no induration, but a bladder apparently completely filled by the tumor, the case may still be operable, since the pedicle of the large tumor may involve but a small part of the mucosa of the bladder.

Lymphatic involvement and visceral metastases occur but rarely.

One of the chief advantages in the transperitoneal operation is that it affords an opportunity to observe the pelvic lymph-nodes and the abdominal viscera. In two cases, because of glandular involvement (one because of extension to the peritoneum and omentum) and in one case because of metastatic nodules in the liver, we have been deterred from removing otherwise operable tumors of the bladder.

The prostate is rarely involved except in the late stages. Should there be any question regarding such involvement, however, the gland should be removed with the tumor. In five of our cases a prostatectomy was necessary.

TABLE 1.—GROUP 1: PATIENTS WITH COMPLETE DATA, NOT OPERATED ON

No.	Age.	Sex.	Duration Symptoms When First Seen, Months.	From Beginning Symptoms to Death, Months.
1	62	M	16	17
2	83	M	180	181
3	61	M	12	17
4	66	M	24	27
5	64	M	8	11
6	58	M	12	13
7	73	M	24	25
8	61	M	8	21½
9	41	M	3	16
10	44	M	2	2½
11	58	M	60	66
12	72	M	24	26
13	50	F	9	25½
14	65	M	18	19½
15	38	M	5	6
16	75	M	4	6
17	69	F	72	76
18	49	M	½	1
19	54	M	3½	7½
20	58	M	12	18
21	58	M	10	13
22	70	M	30	33
23	7½.	F	84	84

Summary: Males 20, females 3.
Average duration of life from beginning symptoms to death (twenty-three patients), thirty months.

RESULTS OF TREATMENT

In order that the results of treatment may be studied to the best advantage, the 114 cases have been divided into three groups. The first group includes all cases in which no operation was done, (*a*) because of the extent and location of the tumor, (*b*) because of the

TABLE 2.—GROUP 2: TRANSPERITONEAL OPERATIONS

No.	Age.	Sex.	Duration Symptoms When First Seen, Months	From Operation to Death, Months	From Operation to Last Heard From, Months	From Beginning Symptoms to Death, Months	From Beginning Symptoms to Last Heard From, Months	Condition When Last Heard From
1	39	F	24	..	60	..	84	O. K.
2	50	M	14	..	59	..	73	O. K.
3	49	M	1	36	..	37	..	Dead.
4	22	M	11	..	54	..	65	O. K.
5	54	M	24	47	..	71	..	Dead.
6	62	M	12	44	..	52	..	Dead.
7	45	M	12	23½	..	35½	..	Dead.
8	37	F	24	..	48	..	72	Recurrence.
9	61	F	10	2	..	12	..	Dead.
10	17	F	60	21	..	71	..	Dead; int. condition
11	70	M	4	13	..	17	..	Dead.
12	29	F	2	..	43	..	45	O. K.
13	58	M	36	..	39	..	75	O. K.
14	62	M	60	7*	..	60	..	Dead.
15	56	M	2	17	..	19	..	Dead.
16	54	M	12	..	35	..	47	O. K.
17	35	F	5	(No other data)				
18	50	M	12	..	28	..	40	O. K.
19	34	F	36	..	26	..	62	O. K.
20	51	M	3	2	..	5	..	Dead.
21	46	M	24	..	33	..	57	O. K.
22	49	M	6	..	16	..	22	O. K.
23	50	F	48	..	8	..	56	O. K.
24	52	M	32	..	15	..	47	Recurrence.
25	44	F	24	..	15	..	39	Prob. recurr.
26	57	M	14	..	13	..	27	Prob. recurr.
27	65	M	1	5*	..	1	..	Dead.
28	45	F	4	..	7	..	11	O. K.
29	31	F	16	..	3	..	19	O. K.
30	49	M	24	2*	..	24	..	Dead.

* Days.

Summary:
Males 19, females 11.
Average duration of symptoms when first seen.....18.5 months.
Average duration of life from beginning of symptoms to death or until last heard from.....41.5 months.
Patients who have lived 5 years..... 3
Patients who have lived 3 years.....10
Operative mortality .....10 per cent.

poor general condition of the patient or (c) because the patient did not remain for treatment. Thirty-eight of the 114 cases are in the first group—thirty males and eight females. Counting all the cases of this group which we have been able to follow (twenty-three: twenty males, three females), we found that the average duration of life from the beginning of any symptoms was thirty months. One patient lived one month and another two and one-half months from the beginning of symptoms and then died apparently of the disease. This would indicate that the trouble had existed for some time before any symptoms appeared. On the other hand, we have had one inoperable case in which the patient lived 181 months (fifteen years) from the beginning of symptoms. Here the early symptoms may have been due to some process other than the neoplasm. If these two cases of short duration and the one of long duration be omitted in estimating the remaining cases, the average duration of life from the beginning of symptoms to the time of death is twenty-six months.

The second group (thirty cases: nineteen males and eleven females) includes all cases in which a transperitoneal operation was done. This type of operation was chosen because the neoplasm was malignant and on a sessile base, which made it necessary thus to resect the entire thickness of the wall of the bladder. In nine of the thirty cases it was necessary because of the site of the lesion to transplant one ureter into another quadrant of the bladder. The prostate was involved and removed in two of the cases. Three of the thirty patients died in the hospital. The findings in these three cases were as follows:

CASE 1.—Man aged 62 years. Left quadrant of bladder removed and ureter transplanted. Pathologic diagnosis, carcinoma. Patient died on seventh day. Autopsy showed acute nephritis in right kidney, with chronic hydronephrosis and functionless kidney on left side.

CASE 2.—Man aged 65 years. Carcinoma, involving considerable of base, removed. Left ureter transplanted. Impossible to close base of bladder. Patient died on seventh day. Autopsy showed extravasation and infection extending behind the peritoneum on both sides. No infection in peritoneum.

CASE 3.—Man aged 49 years, alcoholic, bad risk. Carcinoma, involving base between ureters. Patient died on the third day. Autopsy showed general intestinal paresis, fatty degeneration of liver and chronic nephritis. No infection.

Of the remaining twenty-seven patients, nine are reported dead and seventeen living. One has not been heard from. Three patients have lived five years and are free from symptoms at present. Ten have lived three years, though one probably has recurrence at this time. Of the seventeen patients living at this time, four have been operated on for recurrences. Two had secondary transperitoneal operations, one suprapubic and one was treated with the high-frequency current. In one case, because of involvement of the wall of the bladder in the region of the sphincter muscle, the entire bladder was removed and the ureters were transferred to the loins. This patient has lived two and one-half years and is comfortable with no evidence of recurrence at present. One of the ureters ceased to drain at the end of the first year.

The average duration of symptoms in the patients on whom the transperitoneal operation was performed was 18.5 months. The average duration of life since the operation is 24.4 months and the average duration of life from the beginning of symptoms up to death or to the present time is 41.5 months. Figuring the duration of life without operation to be twenty-six months, we find that these patients have gained an average increase of life of 15.5 months each.

The third group includes the cases in which a suprapubic operation was done without opening the peritoneum. This operation was performed in thirty-three

TABLE 3.—GROUP 3; SUPRAPUBIC OPERATIONS

No.	Age.	Sex.	Duration Symptoms When First Seen, Months	From Operation to Death, Months	From Operation to Last Heard From, Months	From Beginning Symptoms to Death, Months	From Beginning Symptoms to Last Heard From, Months	Condition When Last Heard From
1	20	F	24	12	..	36	..	Dead.
2	29	M	12	50	..	62	..	Dead.
3	69	M	54	41	..	95	..	Dead.
4	43	M	48	..	70	..	118	O. K.
5	56	M	24	..	72	..	96	O. K.
6	43	F	12	..	72	..	84	O. K.
7	37	F	12	63½	..	75½	..	Dead.
8	69	M	12	..	32	..	44	O. K.
9	54	M	12	..	70	..	82	O. K.
10	42	M	24	15	..	39	..	Dead.
11	57	M	144	31	..	175	..	Dead.
12	27	M	15	(No other data)				
13	41	F	24	24	..	48	..	Dead.
14	60	M	8	..	37	..	45	O. K.
15	33	M	36	..	36	..	72	O. K.
16	66	M	36	3	..	39	..	Dead.
17	69	M	12	..	31	..	43	O. K.
18	69	M	12	..	2	..	14	O. K.
19	72	F	24	2	..	26	..	Dead.
20	66	M	18	8½	..	26½	..	Dead, pneu.
21	62	M	12	19	..	31	..	Dead.
22	60	M	24	1	..	25	..	Dead.
23	38	F	12	10	..	22	..	Dead.
24	47	M	24	..	6	..	30	Recurrence.
25	71	M	24	..	5	..	29	O. K.
26	50	M	36	..	4	..	40	O. K.
27	70	M	3	¾	..	4	..	Dead.
28	61	M	1	(No other data)				
29	60	M	12	..	1	..	13	O. K.
30	63	M	24	..	1	..	25	O. K.
31	44	M	42	..	¼	..	42	O. K.
32	59	M	5	..	33	..	38	O. K.
33	47	M	24	(No other data)				

Summary:

Males 27, females 6.

Average duration symptoms when first seen ..... 24.4 months.

Average duration of life from beginning of symptoms to death or until last heard from ..... 46 months.

Patients who have lived 6 years 4

Patients who have lived 3 years 8

Operative mortality ..... 3 per cent.

of the cases (twenty-seven males and six females) and was chosen because the tumor was on a pedicle and not infiltrating into the wall of the bladder or because the patient's general condition would not warrant a more radical procedure. One patient, a man aged 73, died at the end of three weeks. The autopsy showed marked general arteriosclerosis and nephritis, with no evidence of healing in the bladder.

In this series the prostate was removed with the tumor in three cases. The average duration of life from the beginning of symptoms to time of death or to the present in these suprapubic cases is forty-six months. This indicates that these patients have gained the difference between forty-six months and twenty-six months (the average duration of life without treatment), or twenty months, by having the operation performed. The greater duration of life in this series than in the transperitoneal series is probably due to the fact that the transperitoneal series is composed of the cases of indurated, infiltrating tumors, while the suprapubic were mostly those of pedunculated tumors which were either benign or early malignant neoplasms.

Four patients operated on suprapubically are living without any evidence of recurrence more than six years after the operation. Eight are free from symptoms three years after operation. Three of the thirty-three patients have returned and have been treated for recurrence.

The technical points in the various types of operations for tumors of the urinary bladder have changed very little in the past few years. We believe that in these operations as well as in operating on any other malignant tumor, the tumor should either be excised with the cautery, or the cut edges remaining after the tumor has been removed should be thoroughly cauterized. This is especially important in all papillomas.

The employment of the high-frequency current is one of the most useful adjuncts in the treatment of these tumors. We have used this method of treatment in seventeen cases. This number includes eleven cases of recurrence after previous operations done in our clinic and elsewhere. The patient longest under observation since treatment by the high-frequency current was seen after fifteen months. In this case there is no evidence of a return. Five patients have been examined one year after treatment and in none was there any sign of recurrence. No original non-papillomatous growths have been treated by this method, though in several instances recurrences of these tumors have been treated with considerable satisfaction, at least in relieving symptoms. We have found the villous growths on small pedicles the most favorable type for treatment by the high-frequency current.

Knowing the great tendency to recurrence and the possibility of considerable progress in the growth before the appearance of symptoms, it has been our custom to examine these cases by the aid of the cystoscope every three to six months after operation for at least two years. In this way recurrences are discovered and treated early with the high-frequency current. While the results in our cases are not so encouraging as we would like, they are not altogether discouraging. We believe that if patients can be seen a little earlier and technic can be improved so that a more radical excision may be done with a greater degree of safety, the results in the treatment of tumors of the bladder may be made to compare favorably with the results in the treatment of malignancy in other organs.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BEER, O'NEIL AND JUDD

DR. C. M. HARPSTER, Toledo, Ohio: I think the technic presented by Dr. Beer represents an advance in the treatment of these conditions. I have had considerable difficulty with the electrodes that I have secured. The electrode that is impregnated with small strands of copper wire is too pliable, and in working through the water medium it becomes very soft, so that it is difficult to operate with it. The latest electrode sent to me from Wappler is impregnated with a solid steel wire. I am of the opinion, as expressed by Dr. Beer, that copper seems to be the best conductor of the current. The electrode that I have prepared consists of a strand of copper wire, which is a little thick, and is insulated with a black metallic paint. The copper is inserted through a Porges urethral catheter which is cut off straight across at the end, so that in using this solid piece of copper wire you can readily remove the wire through the catheter and in that way dislodge fragments which collect on the end of the electrode. I find this a distinct improvement over any other electrode that I have been able to secure.

To my series of cases as presented by Dr. Beer I would like briefly to add another case which I have recently treated. The patient was a woman 62 years of age, very anemic and cachectic. Hemorrhage had been very profuse. I examined the bladder with a Nitze cystoscope and found a papilloma nearly as large as a hen's egg. The sphincter was very flaccid, and the bladder was able to retain only 2 or 3 ounces, so that it was very difficult to use the high-frequency current through this small amount of fluid. After the first treatment the hemorrhage ceased entirely. I saw this patient on June 7, 1912. The mass had been considerably reduced—I think, over half; the patient had improved greatly in health; the necrotic tissue which came away was calcareous and seemed to collect salts from the urine in the base of the bladder; passage of these masses caused the patient considerable pain. The most difficult feature of this case was a small papilloma, as well as the large one, which surrounded the vesical neck. I have found in these cases that the most difficult point to reach is the vesical neck. Those cases I have submitted to suprapubic cystotomy with the use of the Oudin current at the time of the operation or immediately following the operation, and the use of the high-frequency current through the suprapubic wound, which is kept open for from thirty to sixty days, and then the use of the high-frequency current through the urethra.

DR. B. A. THOMAS, Philadelphia: In connection with one of my cases which Dr. Beer reported, I would like to add that there was a recurrence a little over a year after the apparent cure. It was the first case which I had treated. The growth was very large, almost 2 inches in diameter. The point which I think is of paramount consideration in this method of therapy is the recurrence of these growths. That it is possible to destroy them, I think there is no question, but their recurrence is a matter which is not yet settled. If the conditions do recur their destruction so far as the superficial growth is concerned is, of course, a matter of simple repetition. But providing the recurrences continue indefinitely, may not the pedicle in some cases undergo malignant degeneration? Would not some of these cases be better treated by excision to avoid that possibility? In the present state of our knowledge, however, my own belief is that all tumors of the bladder which are considered benign should be treated by the high-frequency current. If the growth is reasonably considered to be carcinomatous, the only operation to be considered is the transperitoneal operation advocated by Dr. Charles Mayo.

DR. W. E. LOWER, Cleveland: My experience consists of fifty-two cases of bladder tumors, twelve women and forty men. Exactly one-half of this number were malignant: six were inoperable and two were cauterized with the actual cautery after opening the bladder suprapubically. It was impossible to remove the tumors. All the rest were excised by the suprapubic route. In the operative cases there were two deaths, both in extensive malignant cases. Eight died from recurrence in less than one and a half years. Seven are still living, only one after five years and the rest under three years. There is a recurrence in two of the cases. There were twenty-

nine excisions in twenty-six patients with papillomatous growths. There were recurrences in three cases and no operative deaths. The longest time since operation is eight years. Whether there have been recurrences in some of the patients who have gone elsewhere I do not know. I have been in communication with at least twenty of them within the last year but have had no report within the last four months.

My experience with the high-frequency current has been limited; I have had but two cases of papilloma treated by this method and no recurrence in either case. The longest time since the last treatment is four months. One of the most interesting cases has been a malignant growth treated by this method. The patient was operated on a year ago and the growth recurred in three months. I cauterized the recurrence with the high-frequency current and the growth disappeared in three or four weeks. The last cauterization was done six weeks ago; I examined the patient less than one week ago and found no evidence of recurrence at that time. The man has gained considerably in weight, is perfectly comfortable and has no vesical symptoms. How long we will be able to hold this in check remains to be seen. It seems to me that by excision of these tumors, if we are careful not to manipulate the tumor, the results ought to be better than heretofore. My method has been to excise a considerable part of the bladder at the base of the tumor and unite the edges with 00 chromic catgut. I instal a catheter through the urethra for drainage and always close the bladder wound. In one of the cases in which I used the actual cautery I was able to close the bladder wound and there was no leakage. The patient was comfortable for many months afterward.

DR. A. L. CHUTE, Boston: I have usually employed the technic advocated by Dr. Hagner. I do not use so large a catheter; I use a No. 20. In one of my cases, while I was out of town, the catheter plugged up. Luckily there was a rubber drain in the perineum, but a suppuration started which lasted a long time. I think that patients will recover more quickly if we do suprapubic drainage rather than try to close the wound with a retention catheter after intraperitoneal operations.

DR. A. G. RYTINA, Baltimore: I would like to report one case in connection with Dr. Beer's statement that the high-frequency current is inapplicable in all cases of carcinoma of the bladder. The patient was a man 65 years of age, who gave a history of bleeding for four years. He had been seen by a competent genito-urinary surgeon who, on cystoscopic examination, made a diagnosis of carcinoma and considered the case inoperable. He was then referred to me; I found the whole bladder carcinomatous, as proved by a section taken from the bladder. On account of his condition, the marked anemia and cachexia, the great loss of weight and the probability that metastasis had occurred, operation was considered inadvisable, and we began to use the high-frequency apparatus. At present the patient has regained his normal weight; he works every day, which he was unable to do before the treatment, and on cystoscopic examination the bladder is seen to be entirely free of the tumor with the exception of one or two small areas which are still being treated. On that account I feel that in some of these cases, more than for palliative reasons, we may use the treatment. Dr. Beer said that the treatment ought to be carried out only in benign cases. I believe if that is true that the treatment will be restricted to a very few cases, as it is the view of a great many competent pathologists that the great majority of all papillomas of the bladder are carcinomatous.

DR. E. O. SMITH, Cincinnati: Surgery of the bladder, of course, has advanced greatly in recent years. A few years ago it was not considered good surgery to attack the bladder transperitoneally. Now we know that that can be done satisfactorily and in some cases the tumor can be removed more satisfactorily by this route than extraperitoneally. I have found that in inoperable tumors of the bladder, in which the bladder was extensively involved, it is not wise to attempt to remove the tumor; one should simply make a suprapubic drainage. This can be done under a local anesthetic. A self-retaining catheter is introduced, and the patient will get along very nicely. Many of the patients, from being bedridden, have improved until they were able to be up and about their homes. I have one patient who has been wearing a drainage-tube suprapubically for several months. He is comfortable, but every now and then there is some hemorrhage from the bladder. There is always a discharge of more or less pus and mucus, but by wearing a rubber container strapped to his waist he gets around comfortably. He sleeps five or six hours at night. In this particular case the urethral drainage was absolutely intolerable. The patient could not endure the catheter in the urethra. Therefore I believe that in such cases it is more advisable to introduce suprapubic drainage under local anesthesia, than to attempt a complete bladder extirpation. Dr. Judd included in the first group inoperable cases, and in the second and third groups selected cases. Taking the cases as they come perhaps the operative statistics would be not quite so favorable. It would seem that the difference is not exactly what is represented by the figures.

DR. EDWIN BEER, New York: It is incorrect to call the treatment fulguration. Desiccation is also a misnomer, because it is almost impossible to dry anything under water. I think we should stick to the name of high-frequency treatment with the Oudin current until somebody develops a better name which will describe it accurately. According to the teachings of Guyon and Rokitansky papilloma of the bladder is always potentially carcinoma. I believe that five years from now every one of us will be agreed that that is a misstatement of the facts. I believe that if we do not get a specimen at the first sitting with the method which I described, we should use Dr. Young's instrument at the second; we can invariably make the diagnosis of carcinoma of the papillary type or papilloma of the benign type. At the fall meeting in New York I have arranged to show about forty specimens under the microscope which will demonstrate how easily the diagnosis between malignant and non-malignant growths of the bladder can be made.

DR. R. F. O'NEIL, Boston: I tried to make it clear that I considered urethral drainage disadvantageous on account of the very undesirable feature of having a urethrocystitis occur on top of a fresh wound in the bladder, particularly in cases of malignant disease; I think that the suprapubic drain, which need only stay a few days, until the wound has begun to granulate, is much better; the ultimate recovery will not be seriously retarded. The method which I generally employ to fasten a catheter in the urethra is to pass a silk stitch through the lower edge of the meatus and the catheter and tie it lightly.

DR. E. S. JUDD, Rochester, Minn.: I do not think that we shall be able to prove anything more by these statistics than can be proved by statistics ordinarily. The only way we had of getting at the probable duration of life from the beginning of symptoms in these cases of tumors of the bladder was to consider the cases that had not been treated. This group, of course, naturally included the inoperable cases. The fact that they were inoperable at the time we saw them had nothing to do with the time the patient lived after the symptoms began. It might be well also to call attention to the fact that seventeen patients out of thirty, which formed the second group, are still living, so there will be more time to add in each of these cases.

Fat Formation in Diabetes.—It has been stated that a large amount of sugar can be transformed into and stored as fat, but that there is a limit to this fat formation. It is apparent that very obese individuals are living close to this limit, since a slight excess of carbohydrate in the diet frequently gives rise to glycosuria. On the other hand, there are individuals who have very great powers of combustion, and they store fat only with considerable difficulty. In advanced cases of diabetes, patients have lost not only the power of burning sugar but also the ability to store fat. Occasionally there are encountered diabetics who become very obese, such individuals having apparently retained the function of forming fat although their sugar-burning powers are reduced to a minimum.—V. C. Myers and M. S. Fine in *Post-Graduate.*

A FILTERABLE AGENT THE CAUSE OF A SECOND CHICKEN-TUMOR, AN OSTEO-CHONDROSARCOMA *

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AND
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The demonstration of the cause of a transplantable spindle-celled chicken-sarcoma[1] led us last winter to a further study of tumors of the fowl. Spontaneous chicken-tumors are far from rare, and several excellent descriptions of them exist.[2] In the course of ten months we obtained without difficulty about thirty various tumors in the living fowl. None of the growths was quite similar histologically to the sarcoma just mentioned, which is caused by a filterable agent, but there were two that, like it, proved transplantable,[3] namely, a tumor producing true cartilage and bone (Chicken-Tumor 7) and a curious spindle-celled sarcoma (Chicken-Tumor 18). We wish here to report experiments showing that the osteochondromatous tumor is caused by a filterable agent.

The original osteochondroma appeared as a discrete mass on the breast-bone of an adult fowl. It was very hard, appeared to be of long standing, and projected symmetrically to either side of the sternal keel. Microscopically as well as clinically it seemed benign. That it grew on transplantation was surprising, but the less so since several mammalian growths of character apparently benign have proved transplantable, notably a chondroma of the mouse (Ehrlich) and a fibroma of the dog (Ribbert). Murray[4] has described a "chondro-osteoidsarcoma" of the mouse which retained on transplantation its ability to produce bone and cartilage. In the case of the chicken-tumor the growths derived from transplantation consist, like the original tumor, of large cells of connective tissue about which cartilage is soon laid down, followed, in many instances, by true bone containing red marrow. The neoplasm is now in its eighth transplantation generation. In some instances its growth is continuous, though often very slow, and as the mass of cartilage and bone becomes large the host emaciates and finally dies. In other instances the tumor sooner or later becomes stationary and may so remain for months. Recently metastases showing cartilage have been noted in the case of two of the most rapidly growing tumors. There is now prominent in the growth a spindle-celled element and it must be regarded as an osteochondrosarcoma. The general characters of the tumor are described in full in a paper by Dr. Tytler forthcoming in the *Journal of Experimental Medicine*.

Our attempts to determine a cause for the osteochondrosarcoma were not begun until after it had been several months under observation, and in numerous hosts. During this time its general character had altered little. The sarcomatous element was not noticeable and the growth appeared benign. Differential filtration was the method used. Sound portions of the tumor tissue were ground with sterile sand and taken up in a considerable bulk of Ringer's solution; shaking was done in a machine for from twenty to thirty minutes; centrifugalization followed; and then the supernatant fluid was passed through a filter of fine texture (Berkefeld) that held back all tumor-cells. A few cubic centimeters of the clear filtrate were injected into the trunk or leg muscles of a number of normal fowls. Sterile infusorial earth was in many instances added to the filtrate previous to its injection, since the tissue derangement caused by this foreign body has been found to favor the action of the agent engendering Chicken-Tumor 1,[5] the spindle-celled sarcoma.

For a first experiment a large Berkefeld filter (No. 8, V) was employed, without bacterial control as to its permeability. Of the ten fowls inoculated with 10 c.c. of the filtrate in each breast, one had developed thirty-eight days later a mass 0.3 cm. in diameter in the muscle at one of the inoculation sites. At the end of another month, when the fowl died of intercurrent causes, this nodule measured 0.5 cm. It was very hard and consisted of the characteristic, cartilaginous tumor tissue, which, in this instance, contained no bone. At the present date, four months after the injection, the remaining fowls have not developed tumors.

In the later work Berkefeld filters of demonstrated impermeability to *Bacillus fluorescens liquefaciens* have been used. The development of malignancy in the chondroma, as shown by the production of metastases, has furnished a material which *a priori* would seem more suitable for the work. That it is indeed more suitable has been proved by the prompt development of swiftly growing tumors after the injection of the filtrate. For the experiment that follows there was taken the metastatic ovarian tumor of a fowl which carried in both pectoral regions large bony tumors as the result of implantation, and had in the ovary two hemorrhagic, cartilaginous metastases, each nearly as large as a hen's egg, together with diffuse implantation growths of the cartilage-forming connective tissue over visceral and parietal peritoneum.

EXPERIMENT

Cartilaginous tumor tissue to the amount of 11 gm. from the ovarian metastases of Fowl 352, sixth Generation A, was ground in a mortar with sterile sand. The resulting mass was taken up in about 350 c.c. of Ringer's solution warmed to body heat, and the whole was shaken in a machine for twenty minutes and briefly centrifugalized to sediment the tissue fragments. The cloudy supernatant fluid was passed through a Berkefeld filter V, size No. 3, which was tested both before and after the experiment under conditions similar to those obtaining in it, and was found to hold back *B. fluorescens liquefaciens* out of a suspension obtained by shaking. The tumor extract passed readily through the filter. The fluid thus procured was limpid and reddish-yellow (owing to hemorrhages into the cartilage).

Two portions of the filtrate, one with, and one without a little sterile infusorial earth *(Kieselguhr)*, were injected into each of six normal fowls of the breed in which the spontaneous tumor was found (Plymouth Rock). Of the filtrate plus *Kieselguhr* 4 c.c. were used for each injection; of the filtrate alone 6 c.c. The pectoral and thigh muscles were employed as sites.

Eighteen days later the first examination was made. In four of the fowls tumors were found where filtrate plus *Kieselguhr* had been injected. The growths measured from 1 to 3 cm. across and were evidently due to the coalescence of numerous smaller nodules. In two of the four fowls a small, discrete nodule was palpable where the filtrate alone had been injected. It lay in the track of the injecting needle. All the growths were very hard. One of these fowls was at once killed and the growth looked at. Macroscopically cartilage could be seen in it. Microscopically it consisted of cartilage and a tissue, composed of numerous spindle-shaped or stellate cells, which was undergoing a cartilaginous change.

* From the Laboratories of the Rockefeller Institute for Medical Research, New York.

1. Rous, Peyton: THE JOURNAL A. M. A., Jan. 21, 1911, p. 198.
2. Ehrenreich and Michaelis, Tyzzer, Wernicke.
3. Rous, Murphy and Tytler: THE JOURNAL A. M. A., June 1, 1912, p. 1682.
4. Murray, J. A.: Third Scientific Report of the Imperial Cancer Research Fund, 1908, p. 78.
5. Rous, Murphy and Tytler: THE JOURNAL A. M. A., June 8, 1912, p. 1751.

Twenty-five days after the injection the tumors were even harder than before and were growing rapidly. One now measured 4.7 cm. across. In two of the fowls the findings were still negative.

SIGNIFICANCE OF THE FINDINGS

The experiments show that the osteochondrosarcoma, like our spindle-celled sarcoma, can be produced in fowls hitherto normal, by an agent separable from the tumor cells and capable of passing through a Berkefeld filter which holds back *B. fluorescens liquefaciens*. Furthermore, the action of the agent appears to be dependent, like that producing the sarcoma, on a cell-derangement brought about by accessory factors. The addition to the filtrate of sterile infusorial earth to bring about a reactive tissue proliferation resulted in a high percentage of successful inoculations, each tumor arising from numerous local points; whereas the filtrate when injected alone in the same fowls caused a tumor much less frequently and then as a single discrete nodule in the track of injury from the injecting needle.

Despite these points of similarity the agents causing the chicken sarcoma and chondroma can hardly be identical. They give rise to widely different tumor forms. Previous to the experiments here related we had supposed it possible that a single filterable agent by its localization in cells of different potentiality might give rise to different tumors; to test the point we had made numerous attempts to obtain a localization of the agent causing Chicken-Tumor 1 in other cells than those which it usually influences. These attempts were all unsuccessful. And now it appears that the histologic character of the osteochondrosarcoma is due to a peculiarity of the causative agent which is retained when the latter is separated from the tissue of the growth. Thus the agent, when brought into contact with the connective tissue in voluntary muscle, produces not an ordinary spindle-celled sarcoma, but a growth that elaborates cartilage and finally bone. That an extracellular agent should cause a reversion of connective tissue to the so-called embryonic type would not appear strange from what is already known of the changes that connective tissue undergoes in wounds, or when cultivated *in vitro;* but that such an agent should bring about a differentiation ordinarily foreign to the tissue is very remarkable. Yet in this connection it should not be forgotten that bone and, much more rarely, cartilage are sometimes laid down in connective tissue under relatively simple pathologic conditions.

The nature of the agent causing the osteochondrosarcoma cannot at present be stated. The agent causing the spindle-celled sarcoma is probably a living virus.[3] The demonstration that extrinsic agents are the cause of two connective-tissue growths of the fowl which are characteristic malignant tumors renders it necessary to suppose either that such tumors of the fowl have an entirely different etiology from mammalian tumors, or else that the latter are of similar origin. In any case the findings with the chicken tumors largely demolish the theoretical basis on which objections to an extrinsic cause for cancer have been built up.

MACROPHAGOCYTES IN THE SPUTUM OF A PATIENT WITH CHRONIC HEMOPTYSIS *

J. E. POTTENGER, A.B., M.D., MONROVIA, CAL.

Aside from the appearance of macrophagocytes in artificially induced effusions in animals, little has been written on their presence in the human body.

* From the Laboratory of the Pottenger Sanatorium

Metchnikoff[1] called attention to the presence of these elements in the peritoneal cavity of a guinea-pig into which had been injected the red corpuscles of a goose; the macrophagocytes seemed to be the chief factor in the resorption of the foreign corpuscles.

Van Nuys[2] reported the case of a patient whose blood contained large numbers of mononucleated and multinucleated basophilic cells, ingesting the white corpuscles. At times they numbered as high as 40 per cent. of all the white cell elements of the blood. Actual measurement showed them to average 23 by 16.9 microns.

Bartlett[3] reported a case exhibiting the same character of cell in the lobes of the ear, which were markedly cyanotic. The tops of the ears and the general circulation did not contain them at all.

The leukocytes in both these cases were extremely numerous. No particular cause could be ascribed for their presence, although Van Nuys speaks of a certain likeness to leukemia in his case. To certain of the cells were attached long streamers of protoplasm.

Weidenreich[4] found, in the peritoneal exudate of a guinea-pig which had been injected with typhoid bacilli, the macrophagocytes ingesting the eosinophils and neutrophils present in the exudate.

The following case seems to me to be of unusual interest. The patient, W. S. H., was admitted to the sanatorium Sept. 4, 1909, having given a positive Moro reaction. He had had a slight pneumonia nine months before, followed by a continuous hacking cough and bloody expectoration. There was

LABORATORY FINDINGS—BLOOD

	Sp. Gr.	Hb.	W.B.C.	Arneth's Class					General Differential					
				I	II	III	IV	V	Neu.	Eosin.	Baso.	Lymph.	Mono.	Trans.
9/ 7/09	1070	90	9800	17	45	31	7	0	67.1	13.6	0.2	16.1	0.5	2.5
10/ 2/09	1068	90	9800	18	45	31	6	0	60.8	8	0	25.4	0.8	5
2/19/10	1072	95	4900	5	34	50	9	2	65.2	8.2	0.2	21.8	0.4	4.2

some pain on inflating the lungs. The maximum temperature was 99 F. The weight, 235 pounds, was normal. The patient did not tire on exertion, his appetite was good and his condition generally fair. He had had syphilis previously, for which, supposedly, he had been successfully treated, although in June, 1911, he wrote us that a positive Wassermann had been made. Physical examination showed a slight dulness and infiltration in both apices with a few large moist râles.

The eosinophilia was the striking feature in the blood-picture. Directing attention to its cause, neither asthma nor parasitic skin disease was evident. The examination of stools showed neither ova nor parasites.

As the patient had traveled in China and Japan, distomiasis was considered and search was made for ova in the sputum. The twenty-four-hour quantity of sputum was usually about 5 c.c., 10 c.c. being the maximum for any one day. It was mucopurulent and frothy. Repeated search for tubercle bacilli resulted in negative findings. The blood element always present, varied on different days from a slight tinge to a quantity sufficient to mask the purulent character. With the low power, fresh specimens showed numerous round or oval bodies, suggesting ova. With a high power, these bodies presented broadly wavy outlines. No ameboid motion was observed. The usual cellular elements of the sputum were included within the protoplasm of these cells. Curschmann's spirals occasionally and Charcot-Leyden crystals usually were present, the latter in some specimens in great numbers. In specimens stained with Hastings' and Giemsa's stains, free eosinophils were numerous and an occasional atypical basophil

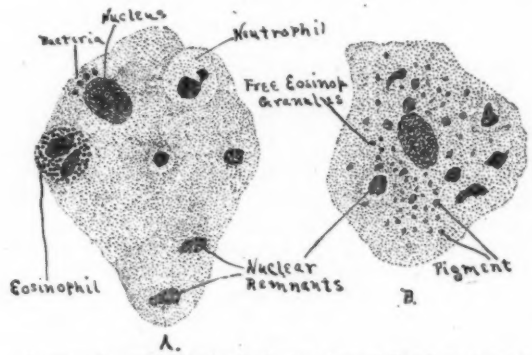
1. Metchnikoff: Ann. de l'Institute Pasteur, Paris, 1899, xiii, 742.
2. Van Nuys: Boston Med. and Surg. Jour., March 28, 1907.
3. Bartlett: Boston Med. and Surg. Jour., May 16, 1907.
4. Weidenreich: Arch. f. mikr. Anat. und Entwicklungsgeschichte, May, 1908.

was seen. The granules of the latter cell stained a very much lighter purple than they commonly do when fresh from the blood-stream. Here also the true character of the large cells was determined. There were one or two to a field (× 900), 30 by 50 microns in size. The cells were mononucleated and multinucleated, the former predominating with rich basophilic protoplasm in which were held neutrophils, eosinophils, lymphocytes and occasionally bacteria in various stages of digestion. In some, the captive elements were practically intact. In others, the entire protoplasm had been digested and only the nuclear fragments remained. Surrounding such fragments a clear area was frequently seen in the protoplasm of the macrophagocyte, representing the zone of digestion. The illustration, drawn from cells observed, shows the beginning (A) and the advanced stage (B) of digestion. In the latter stage the protoplasm of the macrophagocyte took on a dark greenish tinge, often mottled, undoubtedly from the absorption of iron pigment.

In the peripheral circulation none of these cells was observed. The urine examinations showed nothing unusual.

The parasitic nature of the patient's trouble has not been determined. He was directed to Dr. George Dock, then of New Orleans, who confirmed our findings and considered the possibility of distomiasis. He was unable, however, to find any ova or parasites.

Thinking that these macrophagocytes may previously have been overlooked by observers, I have studied about thirty



A, macrophagocyte showing beginning stage of digestion; B, showing an advanced stage.

cases, showing more or less eosinophils in the blood and sputum, with negative results.

The patient wrote us in February, 1912, that his general health is fair and his weight normal, but that the bloody expectoration has continued and is more profuse than when under our observation and that the wheezing sounds in the chest are very annoying. He has been taking salvarsan and potassium iodid. Parasites have not been found in the sputum.

FATAL HEMORRHAGE FROM A SMALL BRANCH OF THE VENA SAPHENA PARVA

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Profuse hemorrhages from injuries of peripheral veins are not uncommon. Fatal hemorrhages from such veins are also on record, but are comparatively rare. Most of the cases of that kind have been hemorrhages from ruptured varicose veins, large distended branches of the long saphenous veins of the lower extremities.

As coroner, I was recently called on to attend a case of fatal bleeding from a very small branch of the small saphenous vein, or vena saphena parva, in a most unusual position, which I have never heard of before, nor have I been able to find a similar instance in the medical literature.

History.—Eliza C., colored, aged 50, was always a healthy woman. There was nothing remarkable in the family history. There was no history of tuberculosis, malignant disease, nervous or mental degeneration or hemophilia.

Her past history was also not remarkable. She never had had typhoid, pneumonia or rheumatism. She gave birth to five healthy children and had had no miscarriages. There was no history of lues. She was not a hard drinker but indulged in alcohol.

On September 5, the patient retired at night as usual in good health. About 12:30 a. m. she had to get up from bed, and in doing so she struck the calf of her right leg against the edge of a trunk standing in her bedroom. The blow broke the skin over the calf of the right leg and ruptured a vein; she began to bleed very freely. She called to her son, who found her in a pool of blood with blood gushing from the wound as from "a spigot," he said. Not knowing what to do he sent one of the other children after a physician; but when the physician arrived about 1:15 a. m., or forty-five minutes after the injury, the patient had bled to death.

Examination of the body revealed a small hole at about the middle of the right calf, not more than an eighth of an inch in diameter, from which blood was still oozing. Had the body been found in the street, the first thought which the nature of the wound would have suggested would have been that the woman had been shot; the aperture was no bigger than that produced by a 22 caliber bullet. In this case the circumstances of the accident, and the victim's own account of it before she died excluded any such possibility. To clear up this most unusual case I ordered an autopsy.

Autopsy.—Performed by Dr. N. G. Keirle at the City Morgue. The wound on the right leg was found to be nearly round in shape and from about one-eighth to one-fourth inch in diameter. A probe passed into it slid for the distance of half an inch or so below and parallel to the surface. After making a semicircular incision and flapping the skin back, we found that the wound entered a small vein lying close to the surface, which continued for the distance of about half an inch and then dipped into the subcutaneous fat, which was rather abundant, and joined a larger vein. There was no sign of any stab or gunshot wound. The only injury found was the ruptured vein not more than an eighth of an inch in diameter. A most interesting feature about the vein was the marked rigidity of its walls. The opening in the lumen at the place of rupture stood gaping, owing to the calcification and sclerotic changes in the walls, and this probably accounted for the profuse and fatal hemorrhage.

The only other interesting features about the post-mortem examination were the marked general arteriosclerosis and atheromatous changes in the aorta, and the extreme pallor of the intestines and liver. The deceased was simply exsanguinated to death. The kidneys showed an adherent capsule and moderate interstitial nephritis. The heart and lungs were normal, and the brain showed nothing remarkable. There were no visible varicose veins on either leg or thigh.

I rendered a verdict of accidental death due to a most unusual fatal hemorrhage from a branch of the small saphenous vein, or vena saphena parva, caused by rupturing that vein through knocking the leg against the edge of a trunk.

1511 Madison Avenue.

Therapeutics

DISTURBANCES OF THE HEART

MYOCARDIAL DISTURBANCES

(Continued from page 1719)

III. FATTY DEGENERATION

Fatty degeneration of the heart muscle may be caused by acute poisoning (as phosphorus, arsenic, etc.), by serious infections, or it may follow fibrosis of the heart or coronary artery disease. The symptoms are those of serious circulatory weakness, which does not seem to improve under any ordinary management. It is difficult, if the heart is enlarged, to determine whether there is more or less serious acute dilatation or whether the heart

muscle has suffered fatty degeneration. Prolonged rest in bed and then a slow convalescence followed by graded exercise will help the dilated heart; it does not do much for real fatty degeneration.

The treatment of such a patient requires the best of judgment as to the amount of food and liquid that should be given and as to the regulation of the administration of laxatives, the sponging of the body, and the means of producing sleep if there is insomnia, and how much reading, conversation or amusements should be allowed, how much stimulation by strychnin or other stimulating drug should be given, and to decide whether or not very small doses of digitalis should be tried. These are all matters for individualizing, and are matters for the best medical judgment that we are called on to give. How much repair can take place in a heart muscle when fatty degeneration has started we do not know. Such treatment will give the heart the only chance it has to recuperate, but the prognosis is bad.

IV. FATTY HEART

The cause of deposits of fat around the heart or in between its chambers is the same as the cause of general obesity. These patients are likely to be obese, or at least to have large abdomens with large deposits of fat around the abdomen. This fat in itself will interfere somewhat with abdominal respiration. This tends to cause dyspnea and the heart tends to be disturbed from these causes, if much fat is not really in the pericardium. The symptoms are those of imperfect heart action; the patient is dyspneic on exertion or on leaning over, the heart acts rapidly on such exertion, the patient puffs, perspires easily, becomes leg-weary and becomes sedentary in his habits and more or less incapacitated for work. He may not be a large eater; if he is, and his eating habit is corrected, the prognosis is better than if he is putting on weight in spite of eating sparingly.

The general treatment is that for obesity, and if the heart muscle is intact various depletion methods may be inaugurated. More and more exercise, sweatings from Turkish baths, electric-light baths, body baking, vigorous massage and more or less purging are all valuable. Anything that reduces the general weight will help the heart. The prognosis is often good.

ENDOCARDITIS

It should be understood that especially in acute conditions a positive separation of endocarditis from myocarditis is incorrect. Acute endocarditis can probably not occur without some myocarditis, and myocarditis probably does not occur without some endocardial disturbance and perhaps some pericardial irritation. This is especially true in endocarditis that occurs during any acute infection, even in rheumatism. The greater the amount of pericarditis, the more serious is the acute condition. The greater the amount of myocarditis, the more doubtful is the heart strength in the near future. The greater the amount of endocarditis, the greater the doubt of freedom from future permanent valvular lesions.

Endocarditis may be divided into: acute mild (simple) endocarditis, acute malignant (ulcerative, infective) endocarditis, chronic endocarditis and valvular disease.

ACUTE MILD ENDOCARDITIS

This inflammation of the endocardium is generally confined to the region of the valves, and the valves most frequently so inflamed are the mitral and aortic. There may be a slight inflammation or actual ulceration and loss of tissue. Vegetations more or less constantly occur on the inflamed surfaces, with more or less danger of particles becoming loosened and moving free in the bloodstream, causing embolic obstruction in different parts of the body. There is also more or less probability of serious adhesions or contractions occurring from the healing of the ulcerated surfaces. In other words, the future health and welfare of the valves depends on the fact that the inflammation has healed without contractions or adhesions.

It is often difficult to decide when acute endocarditis has developed, but with the knowledge that the endocardium often becomes inflamed during almost any of the acute infections, the physician should repeatedly examine the heart for murmurs, for muffled closure of the valves, or for other evidences of endocarditis or myocarditis during the acute infective process.

It has been shown positively that acute endocarditis is due to microorganisms, generally streptococci, staphylococci or pneumococci, and, more frequently than once believed, gonococci. The most frequent causes are acute rheumatic fever, diphtheria, pneumonia, cerebrospinal meningitis, scarlet fever, erysipelas, influenza, chorea, gonorrhea, sepsis and typhoid fever. It may also follow a follicular tonsillitis which is rheumatic in type but has not caused arthritis. Tuberculosis may also occasionally cause an endocarditis. Organisms may be found in a terminal simple endocarditis due to a chronic disease, as tuberculosis or cancer; such inflammations may have been caused by circulating toxins.

It will be noticed by the above classification that the terms "mild" and "malignant" endocarditis are used. It is to convey the fact that there may be no etiologic distinction between the two forms, and it is impossible to decide clinically in the beginning of an endocardial inflammation which form is present. In the malignant form the infection is probably more serious or the infective germs are more active, the ulcerations deeper, and the likelihood of emboli and the seriousness of such embolic infarcts more serious and more dangerous. In other words, the difference in inflammation in the two cases is really one of degree, and the classification is made to coincide with this probable fact. It is of course clinically recognized that endocarditis following certain diseases, especially rheumatism, is of the simple or mild type, while that termed ulcerative endocarditis may occur apparently as a primary or general infection and the causative bacteria are generally readily discovered in the blood.

Mild endocarditis is rarely a primary affection, and is almost invariably secondary to one of the diseases named above. Nearly 75 per cent. of secondary endocarditis occurs as a complication of acute articular rheumatism and chorea, or subsequently. On the other hand, about 40 per cent. of all patients with acute articular rheumatism develop endocarditis, sometimes perhaps so mild as to be hardly discoverable. This complication is most likely to occur during the second or third week of rheumatic fever. It is not sufficiently recognized that a subacute arthritis, recurring tonsillitis, and even a condition of the system with acute, changeable and varying joint and muscle pains may all develop a mild endocarditis, even with subsequent valvular lesions. Therefore in all of these conditions the decision can be made only as to how much rest the patient must have or how serious the condition is to be considered by careful examination of the heart in every instance.

Children are more liable than adults to this complication, especially with rheumatism. Therefore acute mild endocarditis with future valvular lesions occurs most

frequently during childhood and adolescence, and if one attack has occurred, a subsequent infection, especially of rheumatism, is likely to cause another acute endocarditis.

The part of the heart most affected is the part that has the most work to do — the left side of the heart — and of this side the left ventricle and therefore the mitral and aortic valves; the most frequent valve to be inflamed and to suffer permanent disability is the mitral valve, the valve which in its inflamed condition is subjected to the greatest amount of pressure and therefore irritation. Not infrequently soft systolic murmurs are heard at the pulmonary and tricuspid valves during acute endocarditis. It is rare, however, that these valves are so affected during childhood or adult life as to be permanently disabled.

Whether a diminished alkalinity of the blood in rheumatism has anything to do with the cause of the frequent complication of endocarditis has not been determined. Whether the administration of alkalies to the point of increasing the alkalinity of the blood is any protection against the complication of endocarditis has also not been positively demonstrated, although clinically such treatment is believed by a large number of practitioners to be wise.

A chronic endocarditis with permanent lesions of the valves may become an acute inflammation with an infectious provocation.

It has been shown that even in a few hours after endocarditis has started little vegetations composed of fibrin, white blood-cells, red blood-pigment and platelets may develop. Practically in all instances such vegetations develop, and later become more or less organized into connective tissue. These little vegetations, generally minute, perhaps not exceeding 4 mm. in height, are irregular in contour like a wart. Some of these may have small pedicles, and as such, of course, are more likely to become loosened and fly off into the blood-stream. It is of interest to note that these little vegetations are more likely to be on the left side of the heart than the right; more likely to be on the valves than any other part; and more likely to be on the mitral valve than on the aortic. The consequence is a more frequent permanent disability of the valves of the left side of the heart, and of these more frequently the mitral. Although these little vegetations and excrescences sooner or later become mostly connective tissue, still fibrin and white blood-cells may form thin layers over them, more or less permanent. In this fibrin are frequently found bacteria, even when there has been no recent acute inflammation. The deeper layers of the endocardium during acute inflammation may become infiltrated with young cells, with resultant softening and destruction of the intercellular substance. This softening and some swelling of the lower layers of the endocardium allow the pushing up of these extravasated blood-cells which, being covered with fibrin, makes the little vegetations above described; and as just stated, the fibrin may form a more or less permanent cap. If this cap is disintegrated or lost and the cells under it washed away in the blood-stream, ulceration takes place, which may be more or less serious, even to the perforation of a valve or actual erosion of one of its cusps, and the parts of the valves most seriously affected are the parts that strike against each other on closure; in other words, as previously stated, the parts subjected to the greatest strain and the greatest amount of friction during the inflammation are the parts most seriously affected afterward.

If a perforation has occurred, it may make a permanent leak. If an erosion of the edge of the valve has occurred, it may make permanent insufficient closure. If the valve has become thickened and stiffened during the cicatricial healing it may not only be incompetent, but may not open perfectly, and a narrowed orifice be the consequence. During the healing of these granulating ulcers there may be thickening of the part or shrinking of the tissue, and the valve may become shortened by adhesion to the wall, or the cusps of the valve may adhere together so that the valve becomes permanently unable to open properly or to close properly, or to do either.

Not infrequently, and probably more frequently than we recognize, recovery without any of the pathologic lesions just described follows mild endocarditis. The occurrence of simple endocarditis is undoubtedly frequent during acute disease and is unrecognized because there are no lesions of the heart at the time or subsequently; but valvular lesions only too frequently follow the endocarditis that occurs with rheumatism. Occasionally the ulcerations become serious and ulcerative endocarditis or malignant endocarditis develops on the mild inflammation. In this form the little vegetations are likely to become loosened, fly off into the blood-stream, and cause emboli in different parts of the body.

Recently Fraenkel[1] concluded that the microscopic nodules which occur in endocarditis in the myocardium, and which consist of the several varieties of white blood-corpuscles first referred to by Ashoff in 1904, are characteristic only of acute rheumatism. Fraenkel found these nodules in the myocardium in a case of chorea, showing the close relationship between it and rheumatism.

While repeated careful examination of the heart during acute infections will generally show signs of endocarditis if it is present, even if there are no subjective symptoms, the disease may be so insidious as not to be noted until a valvular lesion occurs. Often, however, during the course of the disease, especially in rheumatism, there is a slight increase in fever and there is a discomfort complained of in the region of the heart, frequently accompanied by slight dyspnea. Real pain is seldom present unless the pericardium is affected. If the myocardium is much inflamed at the same time, the heart becomes more rapid and the blood-tension lowered, the apex-beat diminished in intensity and perhaps not palpable. If there is pain, with or without pericarditis, it is often referred to the epigastrium, especially in children. The patient is often nervous, restless and sleepless. In simple endocarditis emboli rarely occur. If they do, of course the signs will be in the part where the infarct occurs. Besides the diminished intensity of the apex-beat and its greater diffusion, the valve sounds may be muffled, and sooner or later there may be systolic murmurs over the different orifices. Of course systolic murmurs may be due to a disturbed condition of the blood, but if they occur with the above-mentioned symptoms and signs, endocarditis should be diagnosed. If the heart becomes seriously weak and the patient suffers much dyspnea, myocarditis should be known to be present with the endocarditis. If there is a diastolic murmur, there can be no question of serious endocarditis having occurred. Unexplainable palpitation during acute illness has been thought to be a distinct symptom of endocarditis.

(To be continued)

1. Fraenkel: Beitr. z. path. Anat. u. z. allg. Path., 1912, lii, 597.

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INSECTS AS CARRIERS OF INFECTIOUS DISEASES

Scarcely second in causative importance to bacteria, the primary agents in infectious diseases, are parasites and other insects, the active and often indispensable mediums in the spread of such diseases. This phase of epidemiology has not been exhaustively studied, and it is possible that scarcely more than a beginning has been made in determining what insects may act as carriers. Mention need hardly be made of the two species of mosquito, the house-fly, the flea, the tick, etc., as well-known carriers. M. F. Gales[1] states that on shipboard roaches, to which hitherto little attention has been paid as carriers of disease, are responsible for the continuance and spread of typhoid, diphtheria, tonsillitis and tuberculosis. He does not state this as a result of experimental demonstration, but as a conclusion arrived at through experience in epidemics in the Navy. If this is possible on board ship it is no less possible in the congested quarters of cities, tenements, rooming-houses and especially hospitals. Gales reports pulverized sodium fluorid used as an insect-powder as the most satisfactory method thus far tried by the Navy for ridding the ships of roaches. W. M. Kerr[2] seems to have found evidence which incriminates the bedbug as a carrying agent in leprosy and sustains the opinion that it is responsible for the transmission of that disease in a large number of cases. In a series of experiments in which numbers of different insects were allowed to feed on the infected areas of leprosy patients and were afterward examined, the flies, fleas and mosquitoes were found to contain very few acid-fast bacilli, but these were found in considerable numbers in a large percentage of the bedbugs. No acid-fast bacilli were found in control insects, which were examined in large numbers. The difficulty of cultivating the lepra bacillus and the inexpediency of experiments on human subjects make further experimental evidence difficult to obtain.

The experiments of M. J. Rosenau, recently reported before the International Congress on Hygiene and Demography,[3] indicate that anterior poliomyelitis may be carried by the common biting or blood-sucking stable-fly. Previous experiments have seemed to demonstrate that the disease is also communicable by the secretions of the nasal mucous membranes and digestive tract. Rosenau's demonstration consisted in allowing flies which had fed about the faces of infected monkeys to bite healthy monkeys. The resulting infection of the latter with anterior poliomyelitis seems to prove that these flies are capable of acting as carriers, and the later experiments of Anderson and Frost,[4] to which reference was made in our editorial November 2, apparently confirm Rosenau's work.

Communities must perforce depend largely on medical men and boards of health for proposing and directing measures looking to the prevention of the spread of disease by carriers. Therefore medical men and boards of health are under obligation to know not only what agents may act as carriers, but also what means may be of service in exterminating the pests.

1. Gales, M. F.: U. S. Nav. Med. Bull., 1912, vi, 212.
2. Kerr, W. M.: U. S. Nav. Med. Bull., 1912, vi, 316.
3. Recent Work on Poliomyelitis—The Biting Fly as an Intermediary, editorial, THE JOURNAL A. M. A., Oct. 12, 1912, p. 1380.
4. Pub. Health Rep., Oct. 25, 1912, p. 1733.

SOME NEW EVIDENCE ON THE TOBACCO QUESTION

The consideration of tobacco and its dangers[1] has heretofore been largely based on the amount of nicotin contained in the smoke. The list of the alleged toxic components is not exhausted, however, with the mention of the familiar volatile alkaloid. Other known products of the combustion of the tobacco remain to share a possible responsibility for any untoward symptoms which may be charged to smoking. Among these products are carbon monoxid gas, prussic acid, furfural and some other aldehyds. Although all of these compounds admittedly belong to the category of noxious products, the dangers which they harbor depend on the quantities in which they are taken. The appreciation of the truth that adequate dosage is requisite for the manifestation of toxicity has served in more than one instance to lessen the instinctive dread attached to any compound whose name is familiarly associated with the word poison.

Recently investigations have been made of some of these toxic products, and the results are of considerable interest. The fact that the action of certain decidedly toxic kinds of tobacco has been attributed in part to the supposed content of hydrocyanic acid in their smoke has induced the Würzburg hygienist, Prof. K. B. Lehmann,[2] to investigate the charge. He has found that the amount of this compound produced depends somewhat on the rate at which the tobacco is smoked; that is, on the conditions attending the combustion process. The slower the current of air through a cigar, the smaller is the amount of hydrocyanic acid formed. The content of the latter in cigar smoke rarely exceeds 0.025 per

1. This subject was discussed at some length by THE JOURNAL, May 8, 1909, p. 1495, and has since been treated editorially as follows: The Pharmacology of Tobacco Smoke, Jan. 30, 1909, p. 386; The Use of Tobacco, July 2, 1910, p. 32; The Effects of Tobacco on Body and Mind, Oct. 1, 1910, p. 1206.
2. Lehmann, K. B., and Gundermann, K.: Neue Untersuchungen über die Bedeutung der Blausäure für die Giftigkeit des Tabakrauchs, Arch. f. Hyg., 1912, lxxvi, 98.

cent.; and if allowance is made for the observed fact that not more than half of the inhaled acid gas is absorbed, the absolute amount residual in the body after smoking several cigars will scarcely amount to more than 4 or 5 mg These analytic details need not concern us further than to exclude prussic acid as the cause of malaise in connection with tobacco smoking; for Lehmann has found that 8 mg. of prussic acid ingested at once in water are without noticeable physiologic response in man. An estimation of the prussic acid yield of certain leaves which sometimes supply the place of tobacco in the smoking practices of youth has likewise excluded that component as the cause of the unquestionable symptoms which are familiar to many.

So far the burden of the blame for the ill effects of smoking would appear to rest on nicotin. This being admitted, the injury possible from tobacco would be to a large extent in proportion to the susceptibility of the individual, the amount of nicotin in the smoke from the particular variety of tobacco, the method and extent of indulgence and the practice of inhaling the smoke.

Investigations made by the London *Lancet*[3] would indicate that the ordinary cheap cigaret contains the least nicotin in the smoke and the pipe the most, the cigar occupying an intermediate position with regard to the amount of nicotin contained. Assuming, then, that nicotin is the essentially injurious substance in tobacco, the cigaret would appear to be the least harmful form, provided that the amount of tobacco consumed was no greater in this form than in others.

The general impression, however, is that cigaret smoking is the most pernicious form of indulgence in tobacco. This might be accounted for in part by the facts that the form of the cigaret makes it possible for young persons to indulge in it when they would not smoke cigars or pipes, that in older persons it lends itself to overindulgence and that the smoke may be inhaled with less irritation and, therefore, that more of the products may be absorbed into the system. Apart from these considerations, moreover, some reformers, notably Miss Lucy Page Gaston, founder and secretary of the Anticigaret League, have maintained that the cigaret habit presented peculiar and distinctive features not to be accounted for on the theory that the cigaret was merely a small and mild cigar. If the observations from which this deduction is drawn are correct, they throw doubt on the theory that nicotin is the most harmful factor in tobacco smoke, and furnish a problem for scientific investigation, just as clinical observations of disease not explained by previous scientific theories demand investigation by laboratory workers.

Further investigations by the *Lancet*[4] indicate that the most injurious forms of smoking are not those in which the narcotic nicotin prevails but those in which there is a larger proportion of the irritant aldehyds, particularly the aldehyd furfural, a substance to which many attribute the injurious effects of cheap liquors[5] and which is commonly distinctive of the smoke from the cheap Virginia cigaret. The *Lancet* calls attention to the fact that furfural is about fifty times as poisonous as ordinary alcohol and concludes that there is a probability that the least harmful tobacco will turn out to be that which yields a minimum of furfural and other aldehyds in the smoke. Although the amount of nicotin present in the cheaper grades of cigarets is practically negligible, the amount of furfural appears to be sufficient in itself to account for the bad effects attributed to cigaret-smoking. The smoke of a single Virginia cigaret, according to the *Lancet* experiments, may contain as much furfural as is present in 2 ounces of whisky. It would be premature, especially since furfural is practically absent from the smoke of Turkish cigarets, to assert now that this substance is accountable for all of the ill effects of excessive cigaret-smoking, but it is at least significant that it is always present in considerable proportions in the smoke of the cheap and popular Virginia cigaret, of which carbon monoxid is another poisonous constituent.

The use of tobacco in its various forms is so general that the subject is of almost universal interest. The smoker may not be willing to give up his indulgence, but he is entitled to know its dangers and safest methods, while educators and all who have anything to do with the young, whether by example or by precept, will appreciate scientific facts with which to back up wise deductions from experience.

3. The Toxic Factor in Tobacco, Lancet, London, 1912, i, 944.
4. The Toxic Factor in Tobacco, Lancet, London, 1912, ii, 547.
5. See reference to experiments of Brunton and Tunnicliffe in Billings' Physiologic Aspects of the Liquor Problem, Boston, 1903, ii, 326.

"DOES GOD FIX THE DEATH-RATE?"

A broad-minded clergyman in his Tuberculosis Day sermon propounded this question and reached a conclusion decidedly negative. "God does not fix the death-rate." Who does then? We all do.

Those theologians aid high death-rates who ignore the demonstrated facts of preventable disease and seek to perpetuate the medieval superstition that infections are the Almighty's merited scourge. Laymen who flout the scientific proof that tuberculosis is curable and can be eliminated from human experience, or who disparage a tuberculosis propaganda as of no personal concern to them, help to cause the death of a consumptive every three minutes in the United States. Councils and legislatures which will not appropriate funds sufficient for the fight which health boards would wage against the Great White Plague are largely responsible for the death of ten thousand a year, twenty-seven deaths every day, in one city alone. Those who disregard antispitting ordinances and the like help to send the death-rate upward. Housewives whose culinary efforts produce dyspeptics directly and drunkards indirectly give far more impetus to the upward trend of the death-rate than most of us imagine. Venders of "patent

medicines" and consumption cures who fleece their victims until the latter have passed far beyond the incipient stage in which physicians could have helped them — such nostrum-fakers have a full share of responsibility for the thousands on thousands of deaths from tuberculosis throughout the country. Those who draw profit from feeding the poor on adulterated food, "rots and spots," and fowls dead in storage several years back, have a similar responsibility for a high death-rate.

A "league for medical freedom" organized to prevent the wise centralization and coordination of health activities and to oppose the inspection of schools and schoolchildren likewise helps to keep the death-rate high. Those who overwork women and children in factories have a heavy share of responsibility for holding the death-rate at a high level; so also do those employers who require men to work at dangerous trades under intolerable conditions, such as those which in some trades hold the consumption-rate above 80 per cent. House-owners who provide dark, insanitary, pest-ridden tenements have no little part in increasing the death-rate. The Christian Scientists and other faith "healers" who close their eyes to the possibilities of material aid, that may often so potently be added to the psychotherapy they are employing, swell the death-rate. Well-meaning mothers, who believe that they are able to bring up their children in defiance of the new-fangled notions of hygiene spread by physicians and visiting nurses, help to keep the death-rate high. Most important of all, incompetent and careless doctors swell the death-rate. For these we as a profession are directly responsible, whether they are untrained men turned out by low-grade medical schools, or members of the profession who have failed to keep up with scientific progress and who have become incompetent through inertia and laziness. All these, by their carelessness, indifference and ignorance, jointly increase the death-rate, which competent and conscientious physicians, sanitarians and reformers are fighting to lower.

We have not the right to blame a cruel deity for deaths which are actually due to crass stubborn ignorance, inhumanity and the refusal to exercise the "common sense which is also an inspiration from the Almighty." A weeping mother told a famous physician that it had pleased Providence to take her baby from her. "Providence had nothing to do with the matter," replied the physician; "it was bad milk that killed your baby." We cannot escape some share of the joint responsibility of fixing the death-rate, but we can choose to be on the side of the forces that are bringing it down instead of those that are sending it up.

CHEDDAR CHEESE

Cow's milk, salt and rennet furnish the materials from which a great variety of so-called American, or cheddar cheese is made. The differences which the diverse products exhibit involve the texture, flavor and aroma of the resultant food. How these pronounced variations are accomplished by the use of almost identical raw materials is a question for which the casual observer and the delighted consumer find it difficult to formulate an answer. Science has established the importance of microorganisms in the ripening of cheese; and bacteriologists have bestowed much attention on the subject.

Hitherto it has been largely a matter of tradition and locality that has maintained the distinguishing character of the types of cheese which are sold under the various familiar designations. It is, indeed, rather remarkable that an industry which depends so largely on subtle biologic factors should have been continued so successfully during all the years that the technical operations have been carried out solely by rule-of-thumb methods. The fact that microorganisms play the dominant rôle in the production of the desired decomposition changes emphasizes the importance of an adequate knowledge of the essential biologic agents involved. Nevertheless some of the methods of cheese manufacture developed in a wholly empiric way are centuries old and thus antedate by many generations the science of microbiology.

The factors that determine whether a cheese prepared out of milk, salt and rennet is to be of one kind or another are found in the methods of the cheese-maker. He is able to vary in one way or another the composition of the cheese, with the result that conditions are established favoring or retarding the growth of the groups of microorganisms which must be the determining elements between the different kinds of cheese. A comparable situation exists in the fermentation industries in which the preparation of the desired wine or beer calls for the presence of the particular variety of yeast that has been found by experience to form a product with the properties sought and the absence of harmful forms.

In studies recently conducted at the University of Wisconsin in collaboration with the U. S. Department of Agriculture[1] it is pointed out that no single form of life is supposed to be responsible for the complex chemical changes that occur in the ripening of any particular variety of cheese, but rather that a considerable number are involved. The methods of manufacture, empiric though they may be, result in an environment that causes certain of the organisms constantly present in milk to develop in a definite sequence. A typical balance between the various forms of life concerned is essential for the normal ripening of cheese, otherwise the product will not be representative. Each of the great commercial varieties of cheese thus presents a distinct problem for the bacteriologist and mycologist; and the Bureau of Animal Industry has been engaged for some time in cooperation with various other scientific laboratories in determining and demonstrating the constant presence of the essential groups of biologic and chemical agents involved in the different cases.

1. Hastings, E. G., Evans, A. C., and Hart, E. B.: Studies on the Factors Concerned in the Ripening of Cheddar Cheese, Univ. Wisconsin Agr. Expt. Sta., Research Bull. 25, July, 1912.

In cheddar cheese the *Bacterium lactis acidi* group is constantly found present in great numbers. The work of the Wisconsin investigators has now shown that another group of bacteria — the so-called *B. bulgaricus* group — develops after the first, and that they reach approximately equal numbers. Each of these groups of organisms initiates certain changes in the cheese mass, consuming the same class of substances and producing the same by-products. The *bulgaricus* group takes up the work of decomposition at a certain stage of the ripening, and brings about its own peculiar changes which possibly prepare the cheese mass for still other types of organisms, and so on to the end of the ripening. Both of the distinctive groups designated above represent names that have lately become familiar terms to medical audiences in connection with the widely heralded sour-milk therapy. It is interesting, therefore, to find that representatives of this popular race of organisms are so prominently identified with a food that is yearly winning a larger place in the dietary of American homes.

THE SUPPOSED SIGNIFICANCE OF PHOSPHORUS COMPOUNDS IN THE DEVELOPMENT OF POLYNEURITIS AND BERIBERI

Analogy may be both useful and misleading in science. The danger lies in the encouragement which is offered to the promulgation of incorrect or illogical inferences. This has been exemplified in some of the deductions which have been the outcome of the active investigation of the etiology of beriberi and its experimental duplicate, peripheral polyneuritis. Schaumann, to whom we are indebted for some of the classic studies in this domain, arrived at the conclusion that these diseases are occasioned by a deficient supply of certain organic phosphorus compounds in the diet. He assumed a consequent impoverishment of the organism in phosphorus as the foremost etiologic factor. There were numerous indisputable facts in apparent confirmation of this view. The foods, notably polished rice and maize, which tend to provoke symptoms of malnutrition, are poor in phosphorus, whereas other dietary components like meat, yeast, the bran of rice and wheat, etc., which are known to alleviate the symptoms of polyneuritis, contain a more liberal supply of organic phosphorus.

Other investigators have pursued a similar line of argument; and for a time the phosphorus content of purchased rice was used in the Philippine Islands as an index of the safety of any sample of the cereal for human consumption. It has since been duly pointed out that the argument applied to phosphorus might equally well be extended to potassium, which is likewise largely removed with the pericarp in the milling processes. Neither potassium salts nor phosphorus compounds have yet found acceptance as curative agents in the malnutrition which their alleged deficiency was supposed to be responsible for.

An added method — perhaps it might be called a crucial test of the phosphorus hypothesis — obviously consists in examining the actual store of phosphorus in the tissues of individuals showing pathologic manifestations. Funk[1] believed that he observed a slight decrease in the phosphatid content of the brain of polyneuritic pigeons. Wieland[2] has analyzed the entire bodies of mice fed until death on polished rice. His data do not justify the conclusion that the slight decrease in phosphorus content occasionally noted was the cause of death. Similar decreases have been found in inanition, so that any low phosphorus findings, in so far as they are at all to be regarded as abnormal, are undoubtedly of secondary moment. In any event the original hypothesis of Schaumann and some of his successors has become highly improbable, if not actually untenable, now that a few phosphorus statistics of the body are available along with analyses of the defective diets. Add to this the further fact that the various curative extracts which have lately been investigated are reported to be essentially phosphorus-free,[3] and the evidence in favor of the original phosphorus theory, which at one time seemed so plausible, is still further shattered.

THE ELIMINATION OF FEEBLE-MINDED STRAINS

After four years' investigation among the population of England and Ireland the Royal Commission compiled statistics[4] which make it evident that the feeble-minded mothers of Great Britain have proportionately twice as many children as the normal. Field workers in this country encounter a similar condition. In the history of the Kallikak family, to which we recently referred,[5] it is stated that there are Kallikak families all around us and that they are multiplying at twice the rate of the general population.[6] This is largely accounted for by the fact that feeble-minded men and women are lacking in sex control. The result of research work by the Department of Public Charities in Philadelphia[7] also confirms the opinion that the rate of propagation of the feeble-minded is far greater than that of the normal, taking all classes together, though probably not so much in excess of the rate among the poorest and most irresponsible classes of the population taken by themselves. It should be noted, of course, that the birth-rate among the very poor and the feeble-minded is not an accurate index of permanent increase, since the low mental or financial status of the parents lessens

1. Funk, C.: The Effects of a Diet of Polished Rice on the Nitrogen and Phosphorus of the Brain, Jour. Physiol., 1912, xlv, 59.
2. Wieland, H.: Beiträge zur Aetiologie der Beriberi, Arch. f. exper. Path. u. Pharmakol., 1912, lxix, 293.
3. Compare Chamberlain and Vedder: A Contribution to the Etiology of Beriberi, Philippine Jour. Sc. (B), 1912, vi, 251. Funk, C.: Chemical Nature of the Substance Which Cures Polyneuritis in Birds Induced by a Diet of Polished Rice, Jour. Physiol., 1912, xliii, 395.
4. Report of the Royal Commission on the Care and Control of the Feeble-Minded, viii, Part 6, p. 189.
5. A Natural Object-Lesson in Heredity, editorial, THE JOURNAL A. M. A., Oct, 26, 1912, p. 1544.
6. Goddard, Henry H.: The Kallikak Family, p. 71.
7. The Degenerate Children of Feeble-Minded Women, Philadelphia Department of Public Health and Charities, 1910.

the children's chances of survival. The infant death-rate in the illegitimate Kallikak line, for instance, was about six times as great as in the legitimate line.

Still, the fact that such defective lines are able to increase at all and to perpetuate themselves for generations is sufficiently disquieting. It is notorious that the offspring of feeble-minded parents are especially liable to inherit the defective mentality. According to Goddard,[5] about 65 per cent. of all the feeble-minded owe their condition to heredity. It thus becomes apparent that the one great problem in the prevention of feeble-mindedness is the prevention of reproduction by those who are thus afflicted.

Many tentative experiments have been made along the line of sterilization. Indiana, Washington, California, Connecticut, Nevada, Iowa, New Jersey and New York have all passed laws which provide for some form of sterilization of feeble-minded and certain criminal types. Pennsylvania is prevented from having such a law only by the governor's veto of the bill. Kansas and Nebraska have both made experiments with this method of dealing with sexual offenders. For political reasons both of these states have had to abandon the practice at least temporarily. The New Jersey law, though far-reaching and carefully planned to avoid abuse while lending itself to the aid of scientific research, has not been in effect long enough to warrant conclusions as to its practical outcome. Indiana has given the sterilization plan the most thorough trial of all. In that state the practice of vasectomy on certain criminal types has been legalized for the last seven years. In the reformatory at Jeffersonville about three hundred men have been thus operated on.

The fact that the operation was not looked on with disfavor by those who were subjected to it has been urged as an argument against its practice. It has been contended that libertinism and venereal disease would be greatly increased if the liability of parentage were entirely removed while the desire and ability to cohabit remained the same as before the operation. While this argument at first sight appears to be reasonable it fails to take into account the fact that the sense of moral responsibility does not exercise a restraining influence on the conduct of the feeble-minded. Although their sex control would be no better after vasectomy than before, it would be no worse for the simple reason that persons of this class have no idea of sexual morality at any time. Therefore it follows that, however strong the moral argument may be against vasectomy when performed on men of normal mentality, it is not valid when applied to the feeble-minded. The objection has also been urged that any sterilizing operation would fall under the head of cruel and unusual punishment, and on this account the practice is at present in abeyance in more than one state pending the outcome of supreme court decisions on the constitutionality of the laws which have provided for such operations. The supreme court of the state of Washington has declared constitutional the law of that state providing for the sterilization of criminals.

When the whole subject is viewed from a practical point of view the arguments for sterilization of the mentally defective seem greatly to outweigh the sentimental reasons advanced against it. Many inmates of institutions for the feeble-minded could be kept safely at their homes and at least help to earn their own living, were it not for the opportunity to reproduce their own kind which such liberty would give them. Although segregation of this class during the whole of the reproductive period is effective in its results, it carries with it a financial burden which seems unnecessarily large. Considered in all its various aspects it would appear that the most practical plan for the elimination of the feeble-minded strains should judiciously combine the methods of segregation and sterilization.

5. Goddard, Henry H.: The Menace of the Feeble-Minded, Pediatrics, June, 1911.

Current Comment

CRIPPLING THE FOOD AND DRUGS ACT

When THE JOURNAL discussed the McCabe-Wilson-Dunlap conspiracy to oust Dr. Wiley from the Bureau of Chemistry, it was shown that the Food and Drugs Act was seriously crippled both by the inadequacy of the punishment meted out to its violators and by the interminable delay in bringing cases to trial. Good examples of the law's delay are found in the abstract of two notices of judgment published in the Propaganda for Reform department of this issue. One of these records a case in which an offense committed in January, 1910, finally came to trial in April, 1912. The public document giving information about this case was not issued until Sept. 27, 1912. The other case described was one of misbranding committed in August, 1910, and brought to trial in April, 1912. The public was given information about this case Sept. 27, 1912. Both of these were clear-cut cases of misbranding. In one, the defendant declined to contest the charge, and was let off with the mere payment of costs; in the other, a plea of guilty was entered and a fine of five dollars was imposed. How much of a deterrent is a law which is so enforced that it may take two years or more for a given case to come to trial and when finally brought to trial results in a mere nominal fine? One of the best preventives against law violation is newspaper publicity. Many firms of the "large and respected" type which, under present conditions, do not hesitate to misbrand or adulterate foods and drugs, would think twice about doing so if they found that the newspapers of the country would give wide publicity to their trial and conviction for such misdemeanors. But the average live newspaper does not want to deal with facts that have become ancient history before they reach the public. "There are more ways of killing a cat than by drowning it;" and there are more ways of killing a law than by failing to enforce it.

STARCH DIGESTION IN INFANTS

The age at which, in the alimentary tract of infants, the various digestive ferments first make their appearance has an obvious bearing on the possibilities of artificial feeding at early ages. There has been a widely prevalent, though frequently contradicted view, that the starch-digesting enzymes do not manifest themselves in the early days of infancy —hence the obvious proscription of starch-containing food materials from the dietary at this period. Jacobi and Heubner have both long contended that food containing starch can be utilized during the first month of an infant's life. The earlier contrary conclusions have been based on post-mortem search for diastatic ferments in the appropriate glands of the digestive apparatus, as well as an examination of the feces for evidences of residual amylases and other enzymes. The ingenious method of Dr. Alfred F. Hess of New York, whereby intestinal contents can be removed by the use of the duodenal catheter,[1] has made it possible to obtain data regarding the pancreatic and intestinal secretions which have hitherto not been accessible to direct examination *intra vitam*. It is of decided interest and physiologic import to learn through the application of the new experimental and diagnostic procedure, that even before new-born infants have been put to the breast, that is, before there is any food factor to incite secretion, the three familiar pancreatic ferments are found in the intestine. Dr. Hess[2] reports that, although the amount of pancreatic secretion is still very scanty during the first week of life, it contains the starch-digesting enzyme with increased regularity. In older infants, a month or more of age, there is a decided augmentation in the amylolytic power of the pancreatic juice. Without attempting to interpret the functional significance of the occurrence of an enzyme at a period when, in normal nutrition, it can scarcely be called on for participation in the digestive process, it is apparent that the findings quoted must modify the point of view of those who still debate the digestibility of starch in early infancy.

BIOCHEMISTRY IN ENGLAND

During the past year a movement toward the organization and closer social affiliation of those biologists and chemists who are interested in the investigation of problems common to the two branches of science has resulted in the formation of the Biochemical Club of England. The names of many on the committee for the present year are familiar in the field of scientific medicine, including Prof. H. E. Armstrong, Prof. W. M. Bayliss, Mr. J. S. Ford, Dr. H. H. Dale, Dr. J. A. Gardner, Dr. W. H. Hurtley, Dr. A. Harden, Dr. F. G. Hopkins, Mr. F. Keeble, Prof. B. Moore, Dr. W. Ramsden, Dr. E. J. Russell, Prof. J. Lorrain Smith and Dr. R. H. Aders Plimmer.[3] The movement cannot fail to lead to meetings which will be stimulating and full of interest, if one may judge by the success which has attended the similar organization, the American Society of Biological Chemists, since its organization six years ago. Chemical points of view are rapidly gaining a preeminent position in the biologic and medical sciences. The closer association and cooperation of investigators in medicine with scientists who are attacking allied problems in other fields, such as agriculture, plant physiology and pathology, microbiology in its industrial applications, etc., is certain to afford advantages of mutual value. In the United States, compared with Germany, for example, there has always been less tendency for the student of chemistry in medicine to hold aloof from the biochemist proper. The consideration of medical problems from a more strictly biologic point of view is a timely attitude, and the new English organization with its broad affiliations is a commendable one.

1. Hess, A. F.: Arch. Int. Med., July, 1912, p. 37.
2. Hess, A. F.: The Pancreatic Ferments in Infants, Am. Jour. Dis. Child., October, 1912, p. 205.
3. These facts are taken from the Biochemical Bulletin, 1912, I, 484.

SUIT THE PRESCRIPTION TO THE PATIENT

It is amusing to note how literally and blindly some recommendations from European sources are quoted on this side of the ocean. As we have remarked before, some foreign medicines cannot be obtained in this country, and when a physician is led to prescribe them by seeing them recommended in some medical periodical, the druggist often has to delay the filling until he can ask the physician to substitute an American equivalent. Another instance of the same mechanical tendency is observed in the recommendation to American readers of a certain foreign diet outline, which includes a glass of light wine with meals. The American writer who cites this outline, without reflecting that the glass of wine is merely a concession to local foreign custom, similar to the cup of coffee permitted with an American breakfast, has solemnly reproduced the item as if it were an essential part of the diet. Such unqualified recommendation may lead a patient to unaccustomed indulgence in liquor. The light wines so commonly used abroad, moreover, are not easily obtained in this country. One who undertakes to adapt foreign prescriptions to American use ought to bear in mind national customs and conditions and exercise common sense as well as linguistic knowledge.

Medical News

ARKANSAS

New Officers.—Phillips County Medical Association at Helena, October 5: president, Dr. W. C. King; secretary, Dr. W. R. Orr, both of Helena.——Third District Medical Society at Wynne, October 31-Nov. 1: president, Dr. W. H. McKie, Wynne; secretary, Dr. B. L. Hill, Stuttgart. The next meeting will be held in Cotton Plant.

Hospital Appointments.—On recommendation of the health officer, Dr. O. K. Judd, the mayor of Little Rock has made the following appointments for a consulting staff for the city hospital: medicine, Drs. Milton Vaughan and A. E. Harris; surgery, Drs. C. E. Bentley, M. D. Ogden and A. Watkins; ophthalmology, Dr. Frank Vinsonhaler, and otolaryngology, Dr. J. G. Watkins.

CALIFORNIA

New Officers.—The thirty-third annual meeting of the San Joaquin Valley Medical Society at Merced, October 8: president, Dr. Henry Hildreth, Delano (reelected); secretary, Dr. R. O. Ross, Fresno (reelected).

Lane Library Dedicated.—The Lane Medical Library of the Leland Stanford, Jr., University at Sacramento and Webster Streets, San Francisco, was formally dedicated November 3.

Dr. Emmet Rixford gave a historical review of the library, and addresses were delivered by Mr. Timothy Hopkins, president of the board of trustees of the university, and by Dr. David Starr Jordan, president of the university.

Personal.—Dr. Mary Fulton, for twenty-eight years a medical missionary in Canton, China, has returned to the United States and is spending the winter in Pasadena.——Dr. C. A. Phelan, Ferndale, has gone abroad.——The house of Dr. W. J. Murphy, Barnville, was destroyed by fire, believed to have been of incendiary origin, October 9.——Dr. W. F. Snow, Sacramento, secretary of the State Board of Health, has returned from Europe.——Dr. J. Hamilton Todd, Oakland, was painfully injured October 8, by being struck by a motorcycle. ——Dr. T. L. Blanchard, Campbell, has started for Europe.—— Dr. Gustavus S. Simmons, Sacramento, has returned from abroad.

ILLINOIS

New Hospital for Milford.—The Milford Hospital, which has been built by Dr. H. D. Junkin, was opened to receive patients the last week in October. The building is a two-story frame structure with accommodation for ten or more patients.

New Officers.—Aesculapian Society of the Wabash Valley, sixty-fifth annual session at Paris, October 3: president, Dr. L. J. Weir, Marshall; secretary-treasurer, Dr. H. N. Rafferty, Robinson.——Wabash County Medical Association at Mount Carmel, October 29: president, Dr. P. G. Manley; secretary, Dr. E. R. Lescher, both of Mount Carmel.

Sangamon County Bulletin.—Sangamon County Medical Society has commenced the issue of a bulletin, of which Dr. J. H. D. Griffiths, Springfield, is editor. In the November issue the bulletin shows the deadly parallels between hog cholera with an $80,000 appropriation and cholera infantum from which 5,373 deaths occurred in the state during 1910 without an appropriation, and concluding with this pertinent question: "Is it not time that your baby had your pigs' protection?"

Ill and Injured.—Dr. Veda C. Murphy, Cuba, who is under treatment at the Graham Hospital, Canton, is reported to be convalescent.——Dr. W. D. Humphrey, Virginia, who was seriously injured in a runaway accident, October 29, is under treatment in a hospital in Jacksonville.——Dr. Robert A. Noble, Bloomington, fractured his left arm October 30, while cranking his automobile.——Dr. B. E. LeMaster, Bushnell, was painfully injured in an automobile accident near Canton, October 23.——Dr. E. J. Higgins, Joliet, county physician of Will County, fractured his wrist while cranking his automobile, October 26.——Dr. T. W. Shastid, Pittsfield, is said to be seriously ill in a hospital in Chicago.——Dr. W. H. Fitch, Rockford, who fractured his leg in September, in Colorado, has resumed practice.——Dr. W. G. Wallace, Mattoon, who has been ill for several weeks, is said to be improving.——Dr. A. G. Kessler, Manhattan, is suffering from an infection of the hand due to an operation wound.——Dr. W. W. Honn, Champaign, who was operated on at the Burnham Hospital, November 3, is reported to be doing well.——Dr. J. M. Bartholow, Urbana, fell from his automobile, November 1, spraining his wrist.——Harry Bennett, Litchfield, who has been ill with typhoid fever, is reported to be convalescent.——Dr. E. J. Cole, Rockton, who has been seriously ill, is said to be improving.——Dr. James Tweddale, Washburn, is reported to be seriously ill.

Chicago

Hospitals Sued.—It is announced that Health Commissioner Young has ordered suit started against the National Emergency Hospital, Eastern Emergency Hospital, American Hospital and Columbus Hospital for failure to comply with the ordinance relative to fire protection.

Personal.—Dr. and Mrs. Arnold C. Klebs, who have been visiting in Chicago, sailed for their home in Switzerland, October 31.——Dr. Frank K. Bartlett has been appointed an instructor in the department of pathology and bacteriology in the University of Chicago and will be connected with the investigation of the chemical phases of tuberculosis.

MARYLAND

New Officers.—Worcester County Medical Society, October 15: president, Dr. J. D. Dickerson, Stockton; secretary-treasurer, Dr. J. L. Riley, Snow Hill.

Faculty Meets on Eastern Shore.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Cambridge, Eastern Shore, November 13. Through the courtesy of the president, Dr. Hugh H. Young, Baltimore, a special steamer was placed at the disposal of the Baltimore members. Meetings were held in the morning and afternoon and in the evening the first of the public health meetings was held, at which the governor spoke. The faculty was entertained at lunch by the Dorchester County Medical Society at the home of Dr. B. W. Goldsborough.

County Commissioners Clash with State Board.—A dispute has arisen between the commissioners of Baltimore County and the State Board of Health. The commissioners have purchased a sewage disposal plant for $600,000 and the state board has filed an injunction against this action alleging it was contrary to the law in not having the approval of the board, and having been taken after the board had disapproved. The board also claims that the plant will contaminate the waters of Jones' Falls so as to menace the health of the city and county of Baltimore, and also that the price paid was too high, and that a suitable plant could have been built at a much less expense.

Baltimore

Society Thanks Councilman.—The Baltimore City Medical Society has passed a vote of thanks to Dr. Timothy Heatwole, a member of the city council, for his services in securing the passage of the law suppressing all noises in the vicinity of hospitals.

Commissioner Asks Increased Appropriation.—Health Commissioner Bosley has asked for an increase of $20,000 in the appropriation for the department of health, to be used for the employment of additional members of his staff and for increases in salary.

New Officers.—Baltimore City Medical Society, November 1: Dr. George A. Fleming, chairman, and Dr. John Staige Davis, secretary, of the section of clinical medicine and surgery; Dr. A. P. Herring, chairman, and Dr. G. Lane Taneyhill, secretary, of the section on neurology and psychiatry.

MISSISSIPPI

Supreme Court Upholds State Board.—The Supreme Court of the state has rendered a decision that the State Board of Health is clothed with police power to regulate and prescribe rules for the practice of medicine. The rule which was brought before the court on appeal was that no person should be permitted to practice medicine in the state without having passed an examination by the board. The case in point was that of J. N. Tucker of Lauderdale County, indicted for practicing without a license and in which a demurrer was filed by the counsel for the defendant.

NEW YORK

New Officers.—Medical Association of Central New York, forty-fourth annual session at Batavia, October 24: president, Dr. L. F. O'Neil, Auburn.——Binghamton Academy of Medicine, October 22: president, Dr. George S. Lape; secretary, Dr. S. B. Blakely.

Health Week in Albany.—Special exercises were given on October 23, at which addresses were made on "A City Beautiful" and "A City Clean." October 24 was set apart as Medical Day. The exhibit of the state at the International Congress on Hygiene and Demography was shown at the State Education Building during the week.

Medical Reserve Corps Organized.—The New York Division of the Medical Reserve Corps, U. S. Army, was formally organized in New York City, November 7, with an initial membership of forty-five. Col. L. Mervin Maus, M. C., U. S. Army, chief surgeon of the eastern division, presided and read a paper on the history and purposes of the Medical Reserve Corps. First Lieutenant Henry Clark Coe was nominated president for 1913; First Lieutenant Harold Hays, secretary. The next meeting will be held on December 5, at Fort Jay, Governor's Island.

Personal.—Dr. Henry T. Dana, Cortland, is about to start the erection of a three-story business block for the use of physicians and lawyers.——Dr. A. T. Kerr, Ithaca, has declined reelection as president of the City Hospital.——Dr. Henry S. Foltz, Cortland, was seriously injured by an accidental gunshot-wound while hunting, October 17.——Dr. W. H. Beattie has resigned as school medical inspector for Utica and will study abroad.——Dr. Robert G. Cornwell, Riverhead, has been elected coroner of Suffolk County.——Dr. H. Ketcham, Auburn, was painfully injured in an automobile collision, October 31. ——Dr. Archer D. Babcock, Syracuse, who has been ill with pneumonia at the Hospital of the Good Shepherd, has recovered and returned home.——Dr. A. T. Kerr has been elected vice-president of the Ithaca City Hospital Association.——Dr. and Mrs. D. C. Twichell, Saranac Lake, have sailed for Europe.

New York City

Harvey Society Lecture.—The fourth Harvey Society Lecture will be given at the New York Academy of Medicine

November 23, by Prof. G. N. Stewart of Western Reserve University, Cleveland, on "The Rate of Blood Flow and the Vasomotor Reflexes in Disease."

Memorial to Dr. Roosa.—On November 7 a memorial tablet to the late Dr. D. B. St. John Roosa was unveiled in the corridor of the New York Post-Graduate Medical School and Hospital, which was founded by Dr. Roosa in 1882 and of which he was president until his death four years ago. The tablet is four feet wide and six in height and is the work of H. M. Shrady. At the top of the tablet, above the half figure in profile of Dr. Roosa, are the words, "Every man's work shall be made manifest."

Anti-Vivisectionists Line Up for Battle.—A meeting was held at the Hotel Savoy on November 7, which was called a Conference of Societies Opposed to Vivisection or to Cruelty in the Practice Thereof. The societies represented were the New England Anti-Vivisection Society of Boston, the Society for the Prevention of Abuse in Animal Experimentation of Brooklyn, the National Society for the Humane Regulation of Vivisection of Boston, the Theosophical Anti-Vivisection League of New York, the American Antivivisection Society of Philadelphia and the Vivisection Investigation League of New York.

Mental Hygiene Conference.—The first Mental Hygiene Conference was opened at the College of the City of New York on November 8 and continued to November 15. The conference is being held under the auspices of the National Committee for Mental Hygiene and the Committee on Mental Hygiene of the New York Charities Aid Association. In addition to the scientific sessions the exhibit which was shown at the International Congress on Hygiene and Demography held at Washington is a feature of the conference. A laboratory was fitted up for demonstrating the Binet-Simon tests for estimating the mental development of children and moving pictures showed the methods of examination and treatment of insane patients followed in the various state hospitals. Parties were conducted through the exhibit every hour from 9 a. m. until 10 p. m. by physicians who explained the various exhibits.

Personal.—Dr. Abraham Jacobi tendered his resignation as trustee of the New York Academy of Medicine, November 7. There were many objections raised to accepting the resignation, but his wishes were finally acquiesced in, and the following resolution passed: "Resolved: That the resignation of Dr. Abraham Jacobi as trustee of the New York Academy of Medicine, an office which he has filled as president of the academy ex officio and as trustee by election together since 1885, nearly twenty-eight years, with great ability and fidelity, and with invaluable benefit to the academy, be accepted with sincere regret and the heartiest wishes for his good health and happiness in the future."——Among the organizers of the China Society of America which was incorporated recently and which has as its object "to promote friendly relations between the United States and China and to disseminate among the American and Chinese peoples a correct knowledge of the ideals, culture and progress of the two nations," are Dr. Louis Livingston Seaman, president of the society, and Dr. Ramon Guiteras.——Dr. S. Adolphus Knopf has been elected honorary president and consulting physician of the medical board of the Bruchesi Antituberculosis Hospital, Montreal. The institution is doing work among the French-Canadian population and in addition to a well equipped dispensary has a fine preventorium near Montreal.

OHIO

Physicians Building in Columbus.—A ninety-nine year lease has been closed for the new physicians' and surgeons' building at 677 North High Street, Columbus.

Emergency Fund Provided.—The city council of Dayton has provided $3,000 to be used by the board of health for the continuance of the fight against diphtheria.

Wants Separate Building for Inebriates.—Superintendent H. C. Eyman, of the Massillon State Hospital, advocates that a separate building should be erected in connection with each state hospital for the treatment of dipsomaniacs.

Manchester Professor at Cleveland.—Thomas Wingate Todd, M.B., Ch.B., F.R.C.S., lecturer in anatomy at Victoria University, Manchester, England, has been appointed Henry Willson Payne professor of anatomy in the medical department of Western Reserve University, Cleveland, and will take up his duties about December 10.

State Hospital Overcrowded.—Dr. E. A. Baber, superintendent of the Dayton State Hospital, has filed a request with the Hospital Board of Administration for an appropriation of $80,000 for two new buildings. The institution has at present 1,236 patients and is overcrowded and the proposed additions will accommodate 200 additional patients.

Ill and Injured.—Dr. C. Flint Kline, Portsmouth, who has been ill for six months, is reported to be improving.——Dr. Louis Kahn, Columbus, injured his shoulder recently while cranking his automobile.——Dr. William R. Dabney, Marietta, is reported to be seriously ill in a sanatorium in Cincinnati. ——Dr. L. A. Lemmon, East Liverpool, who sustained a fractured skull and other injuries in a collision between his automobile and a street car a few weeks ago, is improved and has returned to his home.——Dr. H. W. Nelson, Steubenville, was knocked down by a motorcycle recently and painfully injured.

Personal.—Dr. Harold N. Cole and A. Graham, Cleveland, have returned after a year abroad.——Dr. J. J. R. MacLeod, Cleveland, has returned from abroad. While in London he delivered eight lectures on "Carbohydrate Metabolism" before the University of London.——Dr. Henry S. Upson has resigned as professor of neurology and has been appointed senior professor of neurology in the Western Reserve University, Medical Department.——Dr. Silas Schiller, Youngstown, has been appointed a member of the State Board of Medical Registration and Examination, vice Dr. Joseph N. Stevenson, Chillicothe.—— Dr. David W. Steiner, Lima, has been appointed trustee of the District Tuberculosis Hospital.——Dr. Don C. Hughes, Findlay, captain, M. C., O. N. G., assigned Fifth Infantry, has resigned.

Cincinnati

Health Department Physicians Organize.—The district physicians of the health department have organized an association to discuss health problems. Dr. O. M. Craven has been elected chairman and Dr. Charles A. Stammel, secretary.

Personal.—Dr. William Frederick Jelke, Cincinnati, has been adjudged insane and committed to the Longview State Hospital.——Dr. J. C. Mitchell, assistant food inspector, has resigned.——Dr. Samuel E. Allan has succeeded Dr. John D. Miller as a member of the State Board of Health.

Clinics for School Children.—Medical and psychologic clinics for school children have been established in Cincinnati. The medical clinic is under the direction of the Board of Health and is located in the city hall. The psychologic clinic is at the University of Cincinnati and is under the charge of Dr. Breese and will be held on Tuesday morning of each week.

PENNSYLVANIA

Diphtheria in Allentown.—Over 100 cases of diphtheria have been reported to the Health Department of Allentown, but there are many cases that have not been reported and because of the laxity of physicians in this matter, Dr. N. C. Guth, Allentown health officer, has issued a threat to start wholesale prosecutions, and has stated also that any person violating quarantine by visiting an infected house shall become an inmate until the quarantine is lifted, when the matter will be taken to court and the maximum fine of $100 or imprisonment will be demanded.

Typhoid in the State.—No new cases of typhoid fever have recently been reported from Troy and the revised list of certified cases shows only 200 names. No deaths have occurred since November 3, and physicians are encouraged. Of the 200 patients, 69 are school children, 94 are not more than 20 years of age and 45 are between the ages of 20 and 45. Carelessness and ignorance of milk dealers were responsible for the epidemic of typhoid at Norristown and Paoli, Montgomery County; Findland, Bucks County, and Yeagertown, Mifflin County (where there have been 151 cases of the disease and numerous deaths) according to State Health Commissioner, Dr. Samuel G. Dixon, who made the following statement: "One of these recent epidemics was traced to the refilling of bottles which had been taken from a house where typhoid fever existed. These were passed on for other customers along the line, without being sterilized. Ignorant dealers assumed that because the bottles appeared clean, they were safe to serve milk in to other customers. Another of these epidemics was traced to the water in which the dairyman washed his cans and bottles."

Philadelphia

Personal.—Dr. E. G. Abbott, Portland, Maine, assisted by Drs. H. A. Pingree and F. W. Lamb, of the same city, gave a clinical demonstration of his method of rapid correction of rotary lateral curvature of the spine, at the Jefferson Hospital, November 12.

Portraits for the College of Physicians.—Three portraits were presented to the College of Physicians October 6. One was the Sargent portrait of the late Dr. John H. Musser. A portrait of Dr. Isaac Hays was presented by the family of that eminent ophthalmologist and one of the late Dr. Wharton Sinkler, by his family.

Children's Crusade for Hospital.—Commemorating the children's crusade of 1212, when thousands of little ones perished in their luckless attempt to reach Palestine, a new crusade of children, who wish to help others, has been inaugurated in this city by men and women who are interested in the new children's hospital at Eighteenth and Bainbridge streets. The only requirement for membership in this army is the payment of one penny to be used to endow beds in the new hospital. The head of this movement is Miss B. Hodges, who has interested Mrs. Kate Douglas Wiggin and others in this crusade.

Health Department Issues Scarlet Fever Bulletin.—On account of the great increase of the number of cases of scarlet fever, the Department of Health is issuing a bulletin, warning the public to take every precaution to stop the spread of the disease. The number of deaths from scarlet fever for the first ten months of this year has been less by 81 deaths, or 49 per cent. than for the same period last year and less by 36 deaths, or 30 per cent., on the average number for the same period each year, during the preceding five years. The number of cases, however, has increased for the first ten months of this year by 367 or 22 per cent. over the same period of last year and by 241 cases, or 13 per cent. over the average number of cases reported for the same period each year for the last five years. With the above record the health bulletin urges the public to consider every case of sore throat, especially in children, as a possible source of danger, and to keep such patients away from other people until after examination by competent physicians.

GENERAL

New Officers.—Eleventh annual meeting, Association of Seaboard Air Line Railway Surgeons, Tampa, Fla., October 30-31: president, Dr. John M. Miller, Cross Hill, S. C.; secretary-treasurer, Dr. J. W. Palmer, Ailey, Ga. (reelected.)

Embezzler Captured.—The sharper Maynard, whose exploits were noted in THE JOURNAL, October 5, page 1303, has been captured under another name at Lincoln, Neb., and is said to be fighting extradition to Michigan. He had been carrying out similar tactics in Lincoln, and was ready to make his getaway when arrested.

Personal.—Dr. and Mrs. Francis M. Shook, U. S. Navy, have recently returned from abroad and have located in New York City.——Dr. Paul Preble, U. S. P. H. Service, has been directed to investigate the prevalence of tuberculosis, trachoma, smallpox and other contagious diseases among the Indians of North and South Dakota.

Infectious Diseases.—Cases of dengue were reported, October 31, from Tampa, Gainesville, Miami and Key West, Fla.——Seven-day fever, a disease previously reported only in India and in ports of Southeastern Asia, has occurred in the Canal Zone during the past summer. The Public Health Service warns physicians to be on the lookout for it in the differential diagnosis of malaria, typhoid, dengue and other fevers. No fatal cases have been noted.——An investigation by the Public Health Service covering 4,000 people in the mountain region of Kentucky discovered 500 cases of trachoma, or 12½ per cent., and it is believed that similar conditions exist in the other Appalachian Mountain states. It has also been found to prevail extensively among the Indians on the reservations in the West and Northwest.——One plague-infected rat was found at Arecibo, Porto Rico, October 30.——A plague-infected ground squirrel was found in Contra Costa County, Cal., October 8. No additional cases of plague have been reported in human beings.——A few cases of poliomyelitis continue to be reported from various sections of the country. The epidemic at Buffalo has entirely subsided.

FOREIGN

Yellow Fever in Mexico.—Cases of yellow fever continue to be reported from San Juan Bautista and Merida up to November 3 and 4.

Roentgen Rays and Radium in Gynecology.—To aid him in preparing a paper on this subject for the International Medical Congress at London next August, Dr. Foveau de Courmelles, 26 Rue de Chateaudun, Paris, IX, France, appeals to all confrères to send him as soon as possible their observations in detail on this important question.

Cholera in Other Countries.—Cholera continues to spread in Japan in a number of important ports and has appeared in the interior.——Cholera is epidemic in a number of South China ports.——In Turkey in Asia, cholera has been epidemic during the past summer over wide stretches of territory.——Cholera was reported from Italy to the end of September. No reports have been received since the first of October.

Cholera in the War Zone.—Cable reports from Constantinople state that the outbreak of cholera in that city and among the troops in the war zone near the city is assuming serious proportions. Twenty-three cases had occurred among the troops along the Tchataldja lines up to November 6, with many more suspected cases among the wounded. The disease appears to be getting a firmer hold on account of the massing of troops, lack of proper food and complete absence of sanitary arrangements. Cases have been reported among the refugees in Constantinople.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Oct. 26, 1912.

The National Insurance Act: Great Advance in the Terms Offered by the Government to the Physicians

The determined and united action of the profession in breaking off negotiations with the government and refusing to work the national insurance act has produced a great effect. The original offer by the government of a capitation fee of $1.50 for medical attendance and drugs has been increased to $2.25. Mr. Lloyd-George, Chancellor of the Exchequer, in stating the new proposal to the advisory committee of the insurance commissioners (a committee consisting of physicians and representatives of friendly societies and employers formed to advise the commissioners), gave a remarkably able survey of the situation. Medical attendance on the industrial classes, he said, was at present of three or four different characters. There was, first, private practice, which applied to only a fourth of the population. The greater number of the remainder were attended under contract practice, which was of two forms: First, there was the contract practice of the friendly societies, under which a capitation fee of anything from $.50 to $2.50 was paid. This covered about four million workingmen and, as a rule, did not cover their dependents. The average capitation fee was sometimes very low and averaged about $1, including drugs and everything except major operations. The other form of contract practice, which was very popular in large industrial districts, was the "works doctor." A certain sum of money was charged on a percentage principle ranging from six to twelve cents on every $4 of wages, and covered attendance on the workingman and his family. These two forms together provided for more than half of the working population of the country. The remaining fourth were attended by charitable institutions, such as hospitals or the poor-law doctor. (The latter is only available to destitute people.) But a substantial proportion of the working class received no medical attendance at all, until it was too late to be of any value. It could not be denied that the present position was unsatisfactory So far the working class had found that the only plan by which they can cope with the problem of the treatment of disease was by a form of insurance. The only alternative was for the state to undertake their treatment. In the act the government had chosen the method of insurance. How was it to be made effective? The cardinal defect of contract practice had been that it was inadequate because it was underpaid. Many physicians had assured him that they had given their best services without regard to pay and that there was nothing left after supplying the best drugs. The work was simply charity. The revolt of the profession against contract practice did not begin with the insurance act, though this brought it to a point. In 1905 the British Medical Association inquired into it and correspondence took place in the columns of the *British Medical Journal*. A summary of this showed that 165 physicians engaged in contract practice were satisfied; 458 considered the rate inadequate; 393 stated the amounts to which they considered the rates should be raised. In view of recent events it was interesting to examine their suggestions. Thirty-one suggested a capitation fee of $1; 145 suggested $1.25 or less; fifty-two suggested between $1.25 and $1.50; seventy-eight suggested $1.50; twenty-two claimed $2; twenty-three $2.50, and twenty-nine sums ranging from $2.50 to $4. Thus the vast majority regarded $1.50 as adequate. Moreover, this included the treatment of tuberculosis, which was very expensive. Therefore, when the government suggested $1.50, apart from the treatment of tuberculosis, it was not a mean and meager suggestion, having regard to the facts then known.

THE PHYSICIANS' "SIX POINTS"

After the introduction of the bill the medical profession presented a number of demands—the famous "six points." Most of them had been conceded either in the act or in the regulations. Some of them could not be conceded in any national settlement; for instance, the income limit of $10 a week. It was impossible for the government to lay down

any income limit which would exclude large sections of the industrial population from the provision made for their medical attendance. Supposing the $10 income limit was fixed. In some districts it would be too high; in others, too low. Large sections of the working-classes would be cut out in prosperous times, while in times of depression they would be entitled to treatment. If the working population and the physicians in any given area, however, liked to make arrangements of that kind they had a perfect right to do so within the terms of the act.

THE PROFESSION'S DEMAND FOR REMUNERATION

The physicians demanded $2 for their services apart from drugs and extras. Drugs in the act were calculated as costing about 32 cents. The extras demanded by the profession (for night visits, minor operations, etc.) would cost 50 cents at the least, and unless some system of checking those extras, which he had never been able to devise or discover, could be found, it would be much nearer to 75 cents or even $1. Thus the demand of the profession was equivalent to a demand of over $3 per head of the insured population. By agreement with the profession an eminent actuary, Sir William Plender, examined the books of physicians in six representative towns and found that their incomes for attendance and drugs amounted to about $1 per head of the total population. (Discussed in previous letters to THE JOURNAL.) As this included persons above the insured class who paid higher fees it followed that the cost of treating the insured class was lower than $1 per head. An allowance had to be made, however, for two important considerations. First, poverty and thrift reduced undesirably the amount of attendance and treatment obtained at present by this class, and under the act better attendance would be provided.

THE NEW PROPOSALS

The government had decided to increase substantially the amount available for medical attendance, but would require some guarantee for an improved medical service. The proposal to form a national medical service was alluring. This could be done with the increased money now provided for medical service and would have many advantages. It would be worked somewhat as follows: Take a town of 200,000 inhabitants. At the head of the service would be a principal medical officer responsible for its working, not only a skilled clinician but a highly efficient administrator. Immediately under him would be a staff of specialists who would help the general practitioner in any case of difficulty. Then would come the general practitioners of the service, of whom some would be junior and others senior of wide experience. These would work on an organized system, proper provision being made for night calls and other emergencies. They would be assisted by an efficient staff of nurses. Their work would be done under competent supervision and they would be able promptly to secure skilled assistance in case of difficulty. Such a service would naturally work in close cooperation with the public health and the educational authorities. It would discourage malingering, for no physician would have any inducement to give a certificate unless there were real need for it. That was not the case under the insurance act. A physician who refused certificates was not likely to make himself popular with those who had a free choice of physician. Before resorting to such a sweeping change, however, an attempt would be made to work the act. The government would increase the capitation fee from the original $1.50 for drugs and attendance. First they would add 12 cents for the domiciliary treatment of tuberculosis. It had been proposed to pay fees per attendance, but this would give the physician an interest in keeping the patient at home instead of sending him to a sanatorium. In addition, 60 cents would be added to the fee, making the whole fee about $2.25; 50 cents of this would be allotted for drugs, and this sum might be reduced by 12 cents, which would pass into the doctors' pockets, if they exercised economy in prescribing. This would check a tendency to extravagance which might exist if the physicians had not to pay for drugs. Thus, in any event, the physicians would receive a minimum fee of $1.75 which might be increased to nearly $2. On the other hand, by providing a minimum of 36 cents for drugs there would be no inducement to the physician to cut down the drug bill at the expense of efficiency. Finally, there would be a still further provision for medical services—a central fund for meeting the abnormal cost of drugs in cases of epidemics.

AN IMPROVED SERVICE

For this increased remuneration the government would ask for an improved service. First, the physicians would supply without charge all the certificates which an insured person required. Secondly, they would have to keep simple records of the cases they treat, a new feature in the industrial practice of this country. Thirdly, a proper standard should be maintained not only in regard to the number of visits paid to patients but also to the amount of time given. Finally, when necessary, the physician must resort to those modern means of exact diagnosis, the importance of which was increasing.

THE COUNTRY PHYSICIAN

In the country the drug problem between physician and chemist did not arise, as the chemist was seldom available. Therefore, the physician would provide his own drugs and obtain the whole of the $2.25. This would be some compensation for the increased distances he had to travel to see patients.

The chancellor concluded by claiming that his proposals were not only fair to the medical profession but also liberal; but he did not suggest that he was proposing anything more than physicians deserved. He recognized that unless the physicians felt that they were adequately paid, a good and effective service could not be secured.

Sir Clifford Allbutt, in thanking the chancellor for the lucid and sympathetic way in which he had brought his proposals before the commissioners, said that he believed that the proposals would prove acceptable to the profession. The chancellor had aroused the profession to see that there was something more to be done than to cope with sickness. The crusade against tuberculosis was only a beginning; there were other crusades to come. The great work of prevention would go forward and the example of Panama would be emulated.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Oct. 25, 1912.

Thirteenth Meeting of French Internists

This meeting, which was held in Paris, October 13-16, was the first organized by the Association des médecins de langue française, the formation of which I reported in a preceding letter (THE JOURNAL, Dec. 2, 1911, p. 1849). In addition to French physicians, among those who took part in this meeting were Sir Dyce Duckworth of London, Professors Henrijean and Nolf of Liége, d'Espine of Geneva, Maragliano of Genoa and Lanctot of Montreal. Little time was devoted to miscellaneous articles; apart from the main subjects considered, oxalemia and oxaluria, acute infections of the colon and the therapy of hemorrhagic syndromes, two other subjects of present interest, anaphylaxis and antityphoid vaccination, were discussed.

ANAPHYLAXIS

Professor Achard of Paris reported the case of a patient who had cirrhosis with ascites. A first intravenous injection of 500 c.c. of his own ascitic fluid was made without incident and without causing any other result than a slight elevation of temperature; three weeks later a second injection was made of the same fluid preserved aseptically, sterilized at intervals and controlled for sterility; when only 115 c.c. had passed into the vein there were sudden symptoms of anaphylactic shock with chills, acute dyspnea, pain, laryngeal constriction, cyanosis and a rapid and small pulse. The injection was at once stopped and after ten minutes the symptoms disappeared. This seems all the more remarkable as it is generally understood that serum and albumin from an individual cannot cause anaphylaxis in that individual or in any other of the same species. Nevertheless, Professor Widal of Paris and Abrami and Brissaud have been able to obtain in man injected intravenously with human serum a true general anaphylaxis and they have proposed to term this phenomenon "serum auto-anaphylaxis." This anaphylactic reaction is obtained at the first injection. It is not necessary to make preparatory inoculation. The anaphylactic shock which is produced does not seem to cause immunity, for successive injections are able to make it reappear with the same intensity. These new facts can hardly be explained on any other supposition than that there are constantly present in the circulation heterogeneous albumins which play the part of preparatory injection within the organism.

Dr. Louis Martin of Paris reported statistics obtained at the Paris hospital which show that in more than 5,000 patients receiving injections of serum, chiefly antidiphtheritic, the phenomenon of general serum anaphylaxis was not observed in one. Of twenty patients treated with antimeningococcus serum, two showed signs of serum anaphylaxis. In the first, death occurred with classical symptoms of anaphylactic shock (respiratory troubles, arterial tension and coma): in the other

there were signs of pressure on the brain which could not be explained by a fault in technic or by any anatomic condition, but which was due to an immediate and large effusion of cerebrospinal fluid into the subarachnoid cavity; the symptoms disappeared almost at once on copious lumbar puncture to lessen the intracranial hypertension. Martin does not advise a prophylactic use of rectal injections of serum which are of doubtful value in diphtheria, tetanus and cerebrospinal meningitis and which may be dangerous, as they delay for at least twenty-four hours subcutaneous, intravenous and intraspinal serum injections, which alone have therapeutic value. He suggests that the susceptibility of the patient should be tested by the subcutaneous injection of a small amount of serum (5 c.c.) as slowly as possible, the injection being interrupted at once if any unusual symptoms appear, no matter how slight. Fifteen minutes or half an hour after the trial injection, the therapeutic injection may be given slowly, using the same precautions as in the trial injection, especially if the injection is made intravenously. In case the intraspinal injection is to be made into a sensitized patient, it is necessary to make the trial injection intravenously instead of subcutaneously.

ANTITYPHOID VACCINATION

I have already spoken of the discussions on antityphoid vaccination in France (THE JOURNAL, July 13, 1912, p. 130). In place of the sensitized virus of living bacilli advocated by Metchnikoff and Besredka, Professor Chantemesse prefers cultures killed by heat and Professor Vincent (of the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce) prefers a polyvalent vaccine resulting from the mixture of several strains of bacilli; those derived from the country in which the vaccinations are made are to be preferred, and they should be sterilized by the addition of ether. Both Chantemesse and Vincent consider vaccination by means of a sensitized vaccine of living bacilli as dangerous. Nevertheless in more than 800 persons inoculated by Metchnikoff and Besredka, not a death was reported and not a single carrier of the bacillus of Eberth was observed. It has been said that if a vaccination happens to be made while the patient is in the incubation period of typhoid fever it cannot help but aggravate the disease, the typhoid bacilli contained in the vaccine being added to those which are already circulating in the organism; but Professor Ardin-Delteil of Algiers reported thirty-seven observations tending to prove that sensitized vaccine injected during the course of typhoid fever exerts a favorable action on the disease: it shortens the duration, prevents relapses and lowers the death-rate. Metchnikoff and Besredka believe it hardly likely that sensitized vaccine, which has a favorable action during the course of a disease that has already declared itself, can be harmful during the incubation period.

THE MEETING AND THE PHYSICIANS OF CANADA

At the closing session a letter was read from 4,000 Canadian physicians asking affiliation and inviting the association to meet at Montreal. No immediate action was taken but a desire was expressed to act favorably on the request. The two questions will be given consideration.

The next meeting will be held, not in 1913, owing to the International Medical Congress at London, but in 1914 at Brussels, under the presidency of Professor Henrijean of Liége.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Oct. 25, 1912.

Personal

Wilhelm Ebstein, the gifted Göttingen clinician and medical historian, died October 24, aged 76. Ebstein's scientific works cover almost the whole field of internal medicine. Besides this, Ebstein wrote many fine medico-historical works, occasionally also hygienic studies. The index of his works shows moreover contributions to general literature. His name is essentially connected with the pathology and therapy of metabolic diseases, in which he made pioneer investigations. Ebstein was born Nov. 27, 1836, and after his graduation took first a position as assistant in the Allerheiligen Hospital of Breslau; afterward he became connected with the faculty at Breslau. In 1874 he was called to Göttingen as director of the medical policlinic, and in 1877 was appointed director of the medical clinic (as successor of the clinician Hasse, who, it is said, resigned his position prematurely for political reasons, as a result of pressure from the Prussian government). The first great work that Ebstein wrote was a treatise on kidney diseases, in Ziemssen's "Handbook of Special Pathology and Therapy," in the seventies. In the field of his chief investigations there appeared in 1882 a treatise on "Gout," which was followed in 1884 by a monograph on "Urinary Calculus." Of still more importance was his publication on "Obesity and Its Treatment," which in 1887 had reached its seventh edition. Both constitutional diseases were treated by him in various other scientific as well as more popular monographs, and the great number of editions they reached shows what an interest they awakened in the widest circles. The same is true of the description of the third constitutional disease, diabetes, on which he published in 1887 a treatise and in 1896 a somewhat more generally intelligible pamphlet on the "Diet in Diabetes." The number of his other scientific works is so large that the enumeration of only the most important would make a very long list. I will call attention only to his cooperation in the five-volume "Handbook of Practical Medicine," published by him and J. Schwalbe, which reached its second edition in the course of three years. Further there is the monograph "The Plague of Thucydides," published in 1899, and the notable treatise on "The Diagnosis of Incipient Pericardial Effusion," published in 1892. His latest comprehensive description of the diseases of the kidney in old age, which appeared in the textbook on "Senile Diseases," published by J. Schwalbe, belongs to the field with which he began his scientific career.

Ebstein was an excellent clinician with a marked diagnostic and therapeutic insight. On account of his broadness of mind and kindly disposition he was beloved by his patients, students and colleagues. His interest and understanding of literature and fine arts carried him beyond his special field of work to associate with men of the most various circles, and probably it is due to this circumstance that Ebstein nearly up to his death retained his rare intellectual vigor. He will always occupy an honorable position in the history not only of German but of universal medical science.

October 23, Surgeon-General Dūms of Leipsic died at the age of 62. He had gained a considerable reputation in the field of military sanitation, but performed especially great services in the development of the first-aid service.

October 22 the distinguished physiologist of Heidelberg, Prof. A. Kossel, celebrated the twenty-fifth anniversary of his professorship.

Professor Hermann, the distinguished Königsberg physiologist, will resign his position next year on account of his age.

October 14, the former professor extraordinary of internal medicine at the Strassburg University, Professor Kohts, died at the age of 69.

Priv.-Doz. Dr. W. Fischer, assistant at the pathologic institute at Göttingen, has been called to the newly established position of dozent for general pathology and pathologic anatomy of the German medical school at Shanghai.

Substitutes for Physicians Absent on Vacation

As the Sunday-rest provision for physicians will soon be established in Berlin, a short time ago physicians of the east section of Berlin made arrangements for the regulation of physicians' vacation substitutions at first for one year, following in this as their model the arrangements in Leipsic which have been in force for several years. The occasion for this is the lack of substitutes for the vacation time, which has become constantly more marked in recent years, and the often exorbitant fees demanded by the substitutes. Moreover, patients do not like to be treated by strange physicians, who, as a rule, are quite young. Certain physicians of the east, northeast and southeast sections and of Lichtenberg have agreed on a written contract to remedy this. The contracting parties are divided into groups of eight to ten physicians. Each such group forms a complete circle of substitutes for itself, so that when any physician of the group wishes to take a vacation all the other participants in that group act as substitutes, not only for the longer vacation tours but also for a short absence or in case of sickness. If one of the participants goes on a journey, he informs his clientele by a printed notice, which he places in his waiting room or on the door of his dwelling, naming the physician who will substitute for him. When a patient calls, the house servant gives him a card of similar import with a special notice to give to the substitute, as an indication that they come from the physician who is away. After the return of the physician, the substitutes place a notice in their waiting room, in which it is announced that Dr. X has returned from his journey and the patients are requested to call on their old physician. In order to avoid conflicts in the taking of vacations, a preliminary vacation calendar is arranged at the beginning of the year. The remuneration of the substitutes is so arranged that only a part of the fees goes to them. This sort of vacation substitution is of great advantage both to the physicians and the public, so that it may be expected that this arrangement will soon be extended to other parts of the city.

Marriages

ALBERT LANSING FAGAN, M.D., Herkimer, N. Y., to Miss Henrietta Virginia MacNeil of River Bourgeois, Cape Breton, N. S., in New York City, October 17.

WALLACE EUGENE HUBBARD, M.D., Ancon, C. Z., to Miss Florence H. Plimpton of Somerville, Mass., at Ancon, recently.

WALTER SMITH FERGUSON, M.D., Lynchburg, Va., to Miss Nannie Thomas Twyman of Charlottesville, Va., October 22.

GEORGE ELLIOTT CHAMBERLAIN, M.D., Newbury, Vt., to Miss Edith Louise Stevens of Malden, Mass., October 22.

SAMUEL LOGAN OWENS, M.D., Washington, D. C., to Miss Clara Millikin Weems of Winchester, Va., October 23.

GEORGE THOMAS LUKENS, Conshohocken, Pa., to Miss Anna E. Brockie of Germantown, Philadelphia, October 23.

WILLIAM C. FISHER, JR., M.D., Galveston, Tex., to Miss Mary Bessie Bragg of La Junta, Colo., October 23.

JOHN B. SHERBON, M.D., Hartley, Ia., to Miss Minnie V. Updegrove of Pottstown, Pa., at Hartley, recently.

EDWARD MAUPIN GAYLE, M.D., to Miss Annie Erwin McDowell, both of Morganton, N. C., October 23.

JOHN GASTON RYAN, M.D., New Sharon, Ia., to Miss Flora Canaday, at Vermilion Grove, Ill., September 26.

HARRY G. FORD, M.D., M. C., U. S. Army, to Miss Mary Edith Pickering, at St. John's Chapel, Del Monte, Cal., October 7.

HARRY LANDER JONES, M.D., Kansas City, Mo., to Miss Winnifred Reid, both of Kansas City, Mo., October 19.

WILLIAM J. BROOME, M.D., Doyle, Cal., to Miss Beatrice B. Wilson of Toronto, Ont., at Reno, Nev., September 26.

SYLVESTER M. LAMBERT, M.D., Rochester, N. Y., to Miss Eloisa Tays of San Blas, Sinaloa, Mex., recently.

CHESTER ORVILLE SHEPARD, M.D., Winnebago, Ill., to Miss Adelaide Louise Hobbs of Chicago, October 28.

ARTHUR FREDERIC BEIFELD, M.D., Chicago, to Miss Ellen Abbott of Marshalltown, Ia., November 12.

PROSPER JOSEPH BOUDART, M.D., Chester, Pa., to Miss Florentine Bannon of Trenton, N. J., October 25.

GUY GRAHAM SHAW, M.D., Tarry, Ark., to Miss Rena Belle Atkinson of Star City, Ark., October 17.

JOHN VOSBURG STEVENS, M.D., Chicago, to Miss Isabelle Strawser of Janesville, Wis., October 31.

MARCUS SOLOMON OLIVER, M.D., Chicago, to Miss Nan Schwyn of Grand Island, Neb., recently.

EDWARD A. SUPPLE, M.D., Boston, to Miss Claire A. MacDonald of Newton, Mass., October 30.

ARTHUR SEYMOUR VOSBURGH, M.D., to Miss Elsie Rodman, both of New York City, November 2.

RICHARD JOSEPH GORMAN, M.D., New York City, to Miss Elsa Dierkes of St. Louis, October 30.

SAMUEL J. MORRIS, M.D., Sugar Notch, Pa., to Miss May Cohen of Scranton, Pa., October 27.

Deaths

John Harrison O'Donnell, M.D. Victoria College, Coburg, Ont., 1861; died at his home in Winnipeg, Man., October 26, aged 68. Dr. O'Donnell was a pioneer of Winnipeg. On the formation of the Province of Mountain in 1870, he was called to the legislative council and remained a member of that body and was for a portion of that time speaker. He was elected president of the College of Physicians and Surgeons of Manitoba and occupied the position until 1887. He was also president and senior consulting physician of the staff of the Winnipeg General Hospital until 1882, and a member of the medical board of examiners from 1882 until his death. In 1891 he was elected president of the Manitoba Medical Association; he was first president of the Manitoba Board of Health; a member of the first council of the Manitoba University and of the university board of medical examiners. For several years he was professor of sanitary science at the Manitoba Medical College. He also represented the province officially at the Sanitary Inter-Provincial Conference in Ottawa, at the World's Sanitary Conference in Chicago in 1893 and at the meeting of the British Medical Association in Montreal in 1897.

George Montgomery Tuttle, M.D. College of Physicians and Surgeons, New York City, 1880; a member of the Medical Society of the State of New York and New York Academy of Medicine; formerly physician-in-charge of the New York Emergency Hospital; attending physician at Bellevue Hospital from 1883 to 1889; attending gynecologist at Roosevelt Hospital; consulting physician to the New York Infirmary for Women and Children; professor of gynecology in his alma mater from 1885 to 1893; one of the collaborators of the "American Text-Book of Gynecology" and a frequent contributor to gynecologic literature; died at his home in New York City, October 29, from angina pectoris, aged 56.

Ralph Sherwood, M.D. Berkshire Medical College, Pittsfield, Mass., 1863; a veteran of the Civil War and during a portion of that time surgeon of volunteers; formerly president of the Franklin County (Vt.) Medical Society; a member of the staff of St. Albans Hospital; for two terms medical director of the Department of Vermont, G. A. R.; a member of the first city council of St. Albans and a member of the legislature from Fairfield in 1876; town superintendent of schools of Fairfield for two years; died at his home in St. Albans, October 19, aged 71.

Theoron Woolverton, M.D. Harvard Medical School, 1861; medical director U. S. Navy, retired; died at Grimsky, Ont., October 25, aged 73. He entered the Navy in 1862 and was retired on account of physical incapacity resulting from an incident of service, Nov. 13, 1891. From 1903 to 1908 Dr. Woolverton was on duty at the Navy Recruiting Rendezvous, New York City, and after termination of that service went abroad on leave, and later returned to Grimsky, where he died.

Frederick N. Ogden, M.D. Tulane University, New Orleans, 1883; for several years a surgeon in the United States Navy and later surgeon in charge of the Inter-Continental Railroad Exploration Party and a member of the medical commission to examine into yellow fever conditions in Panama; afterward a practitioner of Colombia, South America, and for several years past a resident of Costa Rica; died in Port Limon, October 10, from heart disease, aged 51.

William Jones, M.D. Cooper Medical College, San Francisco, 1878; president of the Oregon State Medical Association in 1897; formerly president of the Portland City and County Medical Society; for twenty years professor of clinical surgery in the University of Oregon, Portland, and since 1911, emeritus professor; at one time a member of the city board of health; senior surgeon to St. Vincent's Hospital; died at his home in Portland, October 20, aged 59.

Anna Mary Longshore-Potts, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1852; for several years a practitioner of Philadelphia and Adrian, Mich., then in the lecture field for about twenty-five years as a lecturer to women on the laws of health, and afterward a resident of San Diego, Cal.; one of the founders of the Paradise Valley Sanitarium; died at her home in San Diego, October 24, from senile debility, aged 83.

Harry B. Leavitt, M.D. St. Louis College of Physicians and Surgeons, 1896; a member of the Indiana State Medical Association; formerly of Worthington; superintendent of the Indiana State Tuberculosis Hospital, Rockville, since January, 1911; died in the Methodist Episcopal Hospital, Indianapolis, October 29, from bronchial pneumonia, complicated by postpharyngeal abscess and kidney disease, aged 47.

John Edmund Toner, M.D. University of Georgetown, Washington, D. C., 1891; a member of the Medical Society of the District of Columbia; for sixteen years a member of the staff of the Government Hospital for the Insane, Washington, and since 1907 in the employ of the United States Pension Bureau; died at his home in Washington, October 30, aged 52.

William Herbert Pattee, M.D. University of Vermont, Burlington, 1877; a member of the American Medical Association; for a short time a practitioner of Pelican Rapids, Minn., and president of the village; since 1880 a practitioner of Manchester, N. H.; a member of the consulting staff of Eliot Hospital; died at his home, October 22, aged 57.

Oliver Boyer Campbell, M.D. University of Michigan, Ann Arbor, 1875; a member of the American Medical Association; and for three terms president of the Clinton County (Mich.) Medical Society; prominent as a surgeon and banker of Ovid, Mich.; died suddenly at his office, in Ovid, October 28, from cerebral hemorrhage, aged 60.

Charles S. Lower, M.D. University of Tennessee, Nashville, 1884; a member of the Arkansas Medical Society; a practitioner of Hot Springs, Ark., since 1884; died suddenly in a drug store in that city, October 27, from cerebral hemorrhage, aged 58.

Eugene A. Benton, M.D. University of Vermont, Burlington, 1868; a member of the American Medical Association and formerly physician of Merrick County, Neb.; local surgeon for the Union Pacific System at Central City; a veteran of the Civil War; died at his home in Central City, November 1, from heart disease, aged 73.

George Arthur Bevington, M.D. Starling Medical College, Columbus, O., 1898; formerly a member of the American Medical Association; a member of the Nebraska State Medical Association; district surgeon of the Burlington System; died at his home in Schuyler, October 24, from tuberculosis, aged 37.

Rufus Yancey Powell, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1864; for two terms coroner of Macon County, Mo.; a Confederate veteran; for several years postmaster of College Mound, Mo.; died at his home in Macon, October 25, from general nervous breakdown, aged 73.

Charles R. Harden, M.D. Kansas City (Mo.) Medical College, 1891; a member of the Medical Society of the State of California; formerly of Chehalis, Wash.; and coroner of Lewis County; later a practitioner of Los Angeles; died suddenly in a church in that city, October 20, aged 44.

William I. Hamlen, M.D. Michigan College of Medicine, Detroit, 1883; a member of the Michigan State Medical Society; formerly secretary, vice-president and professor of chemistry in his alma mater; died at his home in Detroit, October 26, from pneumonia, aged 57.

D. H. Ramsaur, M.D. Vanderbilt University, Nashville, Tenn., 1861; a surgeon in the Confederate service throughout the Civil War; for many years a practitioner of Rome, Ga.; died at the home of his daughter at Inman Park, Atlanta, Ga., November 1, from nephritis, aged 73.

John William Woods, M.D. New York University, New York City, 1892; of New York City; a member of the Medical Society of the State of New York; visiting physician to the Northwest Dispensary; died in the Policlinic Hospital, October 30, from pneumonia, aged 52.

Caleb S. Evans, M.D. Medical College of Ohio, Cincinnati, 1863; a life member of the American Academy of Ophthalmology and Oto-Laryngology and a well-known specialist of Randolph County, Indiana; died at his home in Union City, October 16, aged 70.

John Duncan McPherson, M.D. University of Michigan, Ann Arbor, 1883; a member of the Medical Society of the State of New York and for several years health officer of Akron; died at his home in that village, October 31, from cerebral hemorrhage, aged 55.

Joseph Foster Land, M.D. Dartmouth Medical School, Hanover, N. H., 1877; a veteran of the Civil War and for many years attending physician to the Home for the Friendless, New York City; died at the home of his son in Erie, Pa., October 20, aged 74.

Ernest Edward Brown, M.D. University of Wooster, Medical Department, Cleveland, O., 1901; a member of the American Medical Association; a well-known practitioner of Oberlin; died in St. Luke's Hospital, Cleveland, October 26, aged 36.

Francis Wilson Daubney, M.D. State University of Iowa, Iowa City, 1883; a member of the Iowa State Medical Society; mayor of Decorah from 1895 to 1897 and from 1899 until his death; died at his home, November 1, from diabetes, aged 56.

George Washington May, M.D. Bellevue Hospital Medical College, 1869; a veteran of the Civil War and one of the earliest settlers of Nodaway County, Mo.; died at his home in Burlington Junction, October 26, from nephritis, aged 74.

Albert Nochim Mehrenlender, M.D. New York University, New York City, 1883; of Brooklyn; died in the Kings County Hospital, October 29, from pulmonary edema following an attempt at suicide by gas asphyxiation.

Charles Hicks, M.D. University of Maryland, Baltimore, 1877; formerly president of the Georgia Medical Society and a member of the State Board of Health; died at his home in Mount Vernon, October 31, aged 58.

Hugh G. Campbell, M.D. Columbus (O.) Medical College, 1882; for twenty-eight years local surgeon at Logan, Ohio, of the Columbus and Hocking Valley Railroad; died at his home in Logan, October 9, aged 53.

Mortimer Roland Beaudoin-Bennett, M.D. Dartmouth Medical School, Hanover, N. H., 1898; died at his home in Grand Rapids, Mich., October 29, from heart disease, aged 34.

Oliver W. Bean, M.D. Eclectic Medical Institute, Cincinnati, 1877; died suddenly near his home in Sheakleyville, October 29, from heart disease, aged 62.

William Henry Harlin, M.D. College of Physicians and Surgeons, New York City, 1862; a naval surgeon during the Civil War; died at his home in Oceanport, N. J., October 27, from disease of the liver, aged 73.

Lunsford P. Black, M.D. Vanderbilt University, Nashville, Tenn., 1882; formerly of Taylor, Tex., and later a resident of Medford and Ashland, Ore.; died in Portland, Ore., October 23, from heart disease, aged 59.

Henry Elijah Owen, M.D. College of Physicians and Surgeons, New York City 1867; a member of the Medical Society of the State of New York; died at his home in New York City, October 12, aged 69.

Silas J. Bower, M.D. McGill University, Montreal, 1865; at one time postmaster of Waddington, N. Y., and a practitioner of the village for forty-seven years; died at his home, October 27, aged 68.

Hiram Bliss Cross, M.D. Cleveland University of Medicine and Surgery, 1866; for forty-one years a practitioner of Jamaica Plain, Boston, Mass.; died at his home, November 1, aged 79.

Wilbert Lee Fay, M.D. Cooper Medical College, San Francisco, 1900; a member of the Medical Society of the State of California; died at his home in Forest Hill, Cal., recently, aged 37.

Clermont E. Thaw Casto, M.D. Miami Medical College, Cincinnati, 1875; a member of the West Virginia State Medical Association; died at his home in Parkersburg, October 14, aged 58.

Gabriel G. Bickley, M.D. Philadelphia University of Medicine and Surgery, 1863; for forty-five years a practitioner of Waterloo, Ia.; died at his home, October 29, from diabetes, aged 72.

Ernest Pring, M.D. Willamette University, Salem, Ore., 1884; of Berkeley, Cal.; a member of the Medical Society of the State of California; died in San Francisco, October 27, aged 54.

Joseph C. Pickard, M.D. Rush Medical College, 1887; formerly a member of the American Medical Association; died at his home in Chicago, October 31, from cerebral hemorrhage, aged 71.

Anthony Fleming, M.D. University of Pennsylvania, Philadelphia, 1895; a member of the Massachusetts Medical Society; died at his home in Lawrence, November 3, from nephritis, aged 39.

Joseph Bayer, M.D. University of Vienna, Austria, 1868; for many years a member of the staffs of the German and Mount Zion hospitals, San Francisco; died at his home, October 29, aged 73.

Isabella M. Pettet, M.D. New York Medical College and Hospital for Women, New York City, 1881; of New York City; died in the Presbyterian Hospital, New York City, September 9.

Calvin P. McAdoo (license, Ohio, 1896) for more than thirty years a practitioner of Miller's Run, O.; died at his home in Bremen, O., October 11, from tuberculosis of the lungs, aged 66.

William Frederick Rex, M.D. Long Island College Hospital, Brooklyn, 1905; a member of the American Medical Association; died at his home in Brooklyn, November 1, aged 31.

Festus F. Pitcher, M.D. Chicago Homeopathic Medical College, 1894; of Battle Creek, Mich.; died at the home of his parents in Mount Pleasant, Mich., October 30, aged 39.

Arthur Emrice Wharton, M.D. University of Louisville (Ky.) 1905; formerly of Denton, Tex., but more recently of Garza; died October 30, on a train near Aubrey, aged 32.

William B. Kennedy (license, Tennessee, 1889); of Vonore; was found dead in the road, having been stricken while on his way to make a professional call, October 27.

Damase Eusche Archambault, M.D. Laval University, Quebec, 1866; of St. Pierre les Becquets, Que.; died at the home of his son in Hull, Ont., October 19, aged 70.

Marcus C. Brockenbrough, M.D. Tulane University, New Orleans, 1870; of Quitman, Tex.; a Confederate veteran; died in Brazos, Tex., about October 29.

Alice McGillivray, M.D. Queens University, Kingston, Ont., 1884; of Hamilton, Ont.; died suddenly in her motor car, October 31, from uremia.

Harry Medley, M.D. Western Pennsylvania Medical College, Pittsburgh, 1902; died at his home in Tarentum, Pa., October 23, aged 32.

Otto W. Mayer, M.D. Medical College of Indiana, Indianapolis, 1880; died at his home in Hamilton, O., October 31, aged 52.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

CONVICTIONS UNDER THE FOOD AND DRUGS ACT

WALNUT OIL

On or about Jan. 4, 1910, Henry A. Mayor, who did business under the name, Mayor Walnut Oil Co., Kansas City, Mo., shipped from the state of Missouri to the state of Washington a consignment of so-called Walnut Oil. More than a year later—Jan. 24, 1911—the United States Attorney filed information against Mayor alleging that the shipment of Walnut Oil was in violation of the Food and Drugs Act. Some of the claims made on the label were:

"Hair color restorer."
"Nature's own remedy."
"Simplest and best on earth."
"A strictly vegetable remedy."
"The only hair dye on earth made from pure vegetables and oils."
"It will cause hair to become soft, bright and glossy as in youth."

The government chemists reported that, in addition to non-volatile matter and ash, they found

Ammonia.
Silver (calculated as silver nitrate).
Unidentified oil (not walnut oil).

The government declared the product misbranded because it was labeled "a strictly vegetable remedy," which it was not, and further because it was labeled "walnut oil" when, in fact, it contained no walnut oil. The case came to trial April 25, 1912, and Mayor entered a plea of *nolo contendere*. The court ordered the case dismissed on the payment of the costs. The public received notice of this case Sept. 27, 1912—two years and eight months after the offense was committed. [*Notice of Judgment 1677.*]

The American Medical Association's exhibit at the International Congress on Hygiene and Demography, Washington, D. C. The exhibit was awarded a Diploma of Superior Merit.

FAGRET'S HAIR TONIC

On Aug. 27, 1910, B. Lucien Brun, who did business as the L. Fagret Company, Baltimore, shipped a consignment of Fagret's Hair Tonic to the District of Columbia. On April 1, 1912—notice the dates—the United States Attorney for the District of Maryland filed information against Brun, alleging that the shipment of the consignment of hair tonic was in violation of the Food and Drugs Act. Some of the claims made on the label were:

"Fagret's Hair Tonic prevents baldness, makes the hair grow."
"It not only keeps the hair from falling out but also from turning gray."
"Prepared only by Mme. L. Fagret Devouges, specialist, hair and scalp."

The government chemists reported finding non-volatile matter, ash, glycerin, flavors, etc., in one of the samples analyzed, as well as:

Alcohol (by volume)	55.40 per cent.
Alkaloid (probably pilocarpin)	0.05 per cent.
Castor oil	8.66 per cent.

The preparation was declared misbranded because the label failed to bear a statement as to the quantity of alcohol it contained. Brun pleaded guilty and was fined $5. The public was given this information Sept. 27, 1912, more than two years after the offense was committed. [*Notice of Judgment 1673.*]

THE ASSOCIATION'S EXHIBIT

The Exhibition on Health of the Fifteenth International Congress on Hygiene and Demography has been referred to in previous issues of THE JOURNAL[1] and a few of the exhibits briefly described. No admission fee was charged and it was estimated that the number of visitors to the exhibition exceeded 100,000 persons. As previously noted in THE JOURNAL,[2] the American Medical Association had an exhibit. This dealt with dangerous or fraudulent "patent medicines" and, with the possible exception of the exhibits by the American Federation of Sex Hygiene, attracted more attention than any other single exhibit in the entire exhibition. Pertinent facts concerning the composition of some of the most widely exploited medicinal humbugs and dangerous "patent medicines" were brought to the visitor's attention by means of placards. The general worthlessness of testimonials was shown, and the shameful uses to which "confidential letters" are put by the quacks who receive them were told by picture and motto. Examples were given showing how the Food and Drugs Act in certain ways protects the public against habit-forming drugs, and further examples were given showing the limitations of the act in not protecting the public against the presence of many dangerous ingredients in nostrums. A diploma of superior merit (the higher of the two classes of diplomas conferred by the exposition) was awarded to the Association's exhibit.

Correspondence

Suicide by Drinking a Solution of Salt

To the Editor:—An editorial on "Poisoning from Common Salt" (THE JOURNAL, Oct. 5, 1912, p. 1297) speaks of the condition as a rare one. I wish to give my experience with several cases of fatal salt poisoning in China.

Throughout Chekiang Province, and probably in other provinces of China, the drinking of a saturated solution of salt is a common mode of committing suicide, and there is none more difficult to treat. In only one case did I succeed in securing recovery. Salt is taken for suicidal purposes sometimes in a common saturated solution made with water as the solvent, and sometimes in the brine from salted kraut.

Poisoning by salt usually presents a picture of high temperature and pulse, purging, vomiting and spasm. In the case in which I was successful in securing favorable results I washed the stomach with 2 quarts of a 1 per cent. solution of silver nitrate, using a stomach-tube. The washings were

1. THE JOURNAL A. M. A., Sept. 28, 1912, p. 1198; Oct. 5, 1912, pp. 1207 and 1311.
2. Ibid., Sept. 28, p. 1198.

chalky white at the start and were kept up till the solution coming away was just slightly white. Then warm tea was used till the stomach was thoroughly cleansed. Large amounts of tea were taken by mouth and a purge given. The patient was then removed to the hospital and made a good recovery. Although suicide is extremely common in this part of China the use of salt solution is not so common as suicide by other less painful methods. The amounts taken vary with the determination of the person taking it, but usually are from 1 to 3 rice bowlfuls—a pint to a pint and a half.

C. HEMAN BARLOW, Greenville, Mich.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ERYTHEMA FOLLOWING PARAFFIN INJECTION

To the Editor:—A young woman consulted me, July 10, 1912, regarding a reddened area over the suprasternal notch, which she wished to have bleached out. About a year previously she had permitted a quack "beauty doctor" to inject some substance, paraffin presumably, into the suprasternal notch for the sake of filling it, as she did not like the appearance of the depression. Immediately thereafter a redness of the overlying skin developed, which has since remained. I froze the erythema with carbon-dioxid snow, treating a quarter of the area at a time and giving the treatments a week apart. Of course, there was the usual inflammatory reaction, but the condition at present appears to be exactly as when I first saw the case. I am now having her apply, once daily, an ointment of one-half grain tannic acid to the ounce, but with little effect. The erythema covers an area about the size of a half-dollar and is best described as a blush. The redness completely disappears on pressure and there are no vessels large enough to be distinguished with the naked eye. The suprasternal notch is completely filled with some substance of about the density of fibrous tissue. There is no well-defined tumor and no bulging. As far as filling the space is concerned, the man did a good job, but a case of this kind ought to be a warning to us not to be too quick to inject paraffin merely for a slight esthetic reason.

I write for advice as to the treatment of the case. The patient is much concerned about the erythema and says she would rather have the material in the notch removed than to have the redness persist, even if a small scar should be left. Would daily applications of epinephrin help? I have hesitated to employ that, as I know there is frequently a secondary dilatation of the vessels after its use. If the paraffin were removed would the redness disappear of a certainty? I have not considered that electrolysis is indicated, because there are no separate vessels to be distinguished. Kindly do not publish my name and address. D. B. E.

ANSWER.—Accidents of the sort described after paraffin injections under or into the skin are not uncommon. Many similar cases have been observed, especially about the face, in some of which the trouble became so pronounced that it caused great and permanent disfigurement. The reason for the trouble is that the paraffin acts as a chronic irritant which results in a persistent inflammation of the involved tissues. This may produce a purplish discoloration of the skin, a tumor of normal skin color of hyperplastic fibrous tissue, or a purplish tumor. Some of these tumors have shown a persistent tendency to slow increase, but not to malignancy. Heidingsfeld has discussed this condition in THE JOURNAL, Dec. 12, 1908, page 2028, and the subject is considered, with bibliography, under "paraffinoma" in W. A. Pusey's book on "Skin Diseases," second edition, page 865. The injections are also warned against in Pusey's "Care of the Skin," page 125. None of the methods of treatment mentioned in the query is of any service. Surgical removal of the paraffin is the only effective treatment and this is not altogether satisfactory because the paraffin is in threads and worm-like masses in the tissue and is difficult to dislodge.

STRICTURE OF THE ESOPHAGUS

To the Editor:—I am to prepare a paper on "Stricture of the Esophagus." Please refer me to literature on the history and treatment of the condition. W. H. COOKE, Pocatello, Ida.

ANSWER.—The following may be referred to:

Ashhurst, A. P. C.: Stricture of the Esophagus, with Report of Eight Cases from the Children's Hospital of Philadelphia, *Univ. Penn. Med. Bull.*, December, 1908.

Lange, S.: Early Recognition of Esophageal Stricture, *Med. Rec.*, Jan. 16, 1909.

Wooten, J. S.: An Impermeable Esophageal Stricture; Operation; Recovery, *Texas State Jour. Med.*, January, 1909.

Lerche, W.: The Cutting of Cicatricial Stricture of the Esophagus Through the Esophagoscope, *Jour. Minnesota Med. Assn.*, February, 1909.

Lucas, C. G.: Stricture of the Esophagus, *Kentucky Med. Jour.*, March, 1909.

Adams, S. S.: Spasmodic Stricture of the Esophagus, *Arch. Pediat.*, March, 1909.

Bell, J. M.: Stenosis of the Esophagus, *Med. Fortnightly*, April, 1909.

Johnston, R. H.: Modern Treatment of Esophageal Stricture, *Lancet-Clinic*, July, 1909.

La Fetra, L. E.: Spasmodic Stricture of the Esophagus, *Arch. Pediat.*, October, 1909.

Allen, C. W.: Esophageal Stricture Treated by Sling-Shot of Various Sizes with Excellent Results, *New Orleans Med. and Surg. Jour.*, January, 1910.

Ross, G. W.: Traumatic Esophageal Stricture in Two-Year-Old Child, with Radiograph, *New York State Jour. Med.*, July, 1910.

Jackson, C.: Stenosis of the Esophagus Following Swallowing of Caustic Alkalies, THE JOURNAL, Nov. 26, 1910, p. 1857.

Akin, H. L.: Stenosis of the Lower End of the Esophagus, *West. Med. Rev.*, February, 1911.

Salter, A. G.: Case of Esophageal Stricture, *Australasian Med. Gaz.*, April 20, 1912.

Downie, W.: Analysis of One Hundred Consecutive Cases of Stricture of Esophagus, *Glasgow Med. Jour.*, May, 1912.

Downie, W.: Analysis of One Hundred Consecutive Cases of Stricture of the Gullet, *Glasgow Med. Jour.*, June, 1912.

Morse, J. L.: Unusual Cases of Narrowing of the Esophagus in Childhood, *Arch. Pediat.*, July, 1912.

Keiper, G. F.: Strictures and Diverticula of the Esophagus, *Laryngoscope*, September, 1912.

Morton, J.: Case of Stricture of the Esophagus, *Glasgow Med. Jour.*, October, 1912.

SODIUM CACODYLATE IN TUBERCULOSIS—COMPOSITION OF PROTONUCLEIN

To the Editor:—1. Is there any literature on the use of sodium cacodylate in the treatment of tuberculosis? What are its therapeutic uses and dosage?

2. Please give me the approximate composition of Protonuclein.

J. A. C.

ANSWER.—1. We find no recent article treating of sodium cacodylate in tuberculosis, but it was recommended for that disease some years ago. Sodium cacodylate is used as a substitute for other preparations of arsenic. Its dosage is 0.025 to 0.12 gm. (½ to 2 grains) in pills, hypodermically or by enema. Reference may be made to the following two articles in THE JOURNAL on the general subject:

Dawes, S. L., and Jackson, H. C.: Physiologic Action, Elimination and Therapeutic Application of Sodium Cacodylate Used Hypodermatically, THE JOURNAL, June 22, 1907, p. 2090.

Dawes, S. L.: The Therapeutic Value of Sodium Cacodylate, THE JOURNAL, Aug. 5, 1911, p. 480.

2. The following statement is taken from the report of the Council on Pharmacy and Chemistry (Reed and Carnrick's Methods, THE JOURNAL, Oct. 5, 1907):

Protonuclein, according to the definition indorsed by the firm, is a powder prepared from various glands (thyroid, thymus, salivary, intestinal, lining of stomach, pancreas, spleen and the brain, including the area at the base). These glands are dried in a thermostat (at or below 100 F.); the fat is removed by ether, the dry glands disintegrated, the connective tissue removed by sifting and the resulting powder is coated with an ethereal solution of benzoin and mixed with milk-sugar. The glands are used proportional to their relative weight in the body. Briefly stated, the powder represents the dried parenchyma cells and leukocytes of the organs used.

From such a product one would expect essentially the known action of nucleins, viz.: hyperleukocytosis and its consequences; the thyroid might also have some effect; the digestive ferments would probably be nearly inactive, on account of mutual interference. No stress is laid on them in the literature, so that we may neglect them.

The nuclein content of the product is high (0.28 per cent. of phosphorus) and might well suffice to explain the therapeutic results ascribed to this article. The manufacturers, however, claim that Protonuclein vastly transcends ordinary nuclein by the possession of distinctive qualities. In support of this claim two lines of evidence are adduced, the one experimental, the other speculative.

The claim that Protonuclein contains the constituents of protoplasm unaltered and the other claims as to the therapeutic action of Protonuclein aside from the action of the nuclein contained in it are held by the Council to be improbable and unwarranted.

LITERATURE ON THE HYGIENE OF SWIMMING-POOLS

To the Editor:—In THE JOURNAL, Oct. 19, 1912, p. 1424, I find a paper on "The Hygiene of Swimming-Pools," by Dr. M. P. Ravenel. Please refer me to any other data on the subject. The inadvisability of establishing a pool in the new Y. W. C. A. to be built here is being strongly urged, and official data on the subject would be appreciated. F. MOYLAN FITTS, Richmond, Va.

ANSWER.—The following may be referred to:

Lyster, W. J.: Hygiene of the Swimming-Pool, THE JOURNAL, Dec. 16, 1911, p. 1992.

Sanitation of Swimming-Pools, *American Homes*, ix; supplement, April, 1912, p. 20; *Scient. Am. Supplement*, Jan. 27, 1912, p. 59.

Tully, E. J.: Hygiene of Swimming-Pools, *Am. Jour. Public Health*, March, 1912.

Porter, H. F. J.: Menace of the Bathing-Pool, *Survey*, July 27, 1912, p. 588.

LITERATURE ON PHENOLSULPHONEPHTHALEIN

To the Editor:—1. Please inform me where I can obtain literature on the phenolsulphonephthalein functional test introduced by Rowntree and Geraghty (used as a test in kidney lesions). 2. What is the nature of the test, etc.?

WILLIAM S. CAMPBELL, M.D., Albany, Mo.

ANSWER.—1. In looking through our indexes we find the following articles on the subject referred to:

Rowntree and Geraghty: *Jour. Pharm. and Exper. Therap.*, July, 1910, 1, 579.

Geraghty and Rowntree: *Tr. Assn. Am. Genito-Urin. Surg.*, 1910, p. 59.

Rowntree, L. G., and Geraghty, J. T.: Study of the Functional Activity of the Kidneys by Means of Phenolsulphonephthalein, *Ann. d. mal. d. org. génito-urin.*, Feb. 15, 1911, No. 4; abstr. in THE JOURNAL, April 15, 1911, p. 1151.

Keyes, E. S., Jr.: Phenolsulphonephthalein as Test for Renal Function Before Operation, *Am. Jour. Urol.*, April, 1911.

Geraghty, J. T., and Rowntree, L. G.: The Phenolsulphonephthalein Test for Estimating Renal Function, THE JOURNAL, Sept. 2, 1911, p. 811.

Eisenbrey, A. B.: Elimination of Phenolsulphonephthalein in Various Experimental Lesions of Kidney, *Jour. Exper. Med.*, November, 1911, No. 5; abstr. in THE JOURNAL, Nov. 25, 1911, p. 1798.

Boyd, M. L.: Phenolsulphonephthalein and Functional Test of the Kidneys, THE JOURNAL, March 2, 1912, p. 620.

Austin, J. H., and Eisenbrey, A. B.: Experimental Acute Nephritis: Elimination of Nitrogen and Chlorids as Compared with that of Phenolsulphonephthalein, *Jour. Exper. Med.*, October, 1911, No. 4.

Rowntree, L. G., and Geraghty, J. T.: Phthalein Test; Experimental and Clinical Study of Phenolsulphonephthalein in Relation to Kidney Function in Health and Disease, *Arch. Int. Med.*, March, 1912, p. 284; abstr. in THE JOURNAL, April 6, 1912, p. 1038.

The Phenolsulphonephthalein Test in Surgery and the Genito-Urinary Tract, THE JOURNAL, May 27, 1912, p. 1305.

2. Phenolsulphonephthalein, like phenolphthalein, gives a red color with alkalies. When excreted by the kidney, the urine, after being made alkaline, will show this red color. By the time required for the excretion of the substance by the kidney and its appearance in the urine an estimate is made of the functional activity of the organ.

CONFIDENCE TO BE OBSERVED BY PHARMACIST IN THE MATTER OF PRESCRIPTIONS

To the Editor:—Please let me know what the pharmacist should do under the following conditions: The prescription blanks of Dr. A announce two "associates," Dr. X and Dr. Y. Dr. A asked the pharmacist for a list of patients for whom Dr. X had prescribed, with the dates. Dr. X, hearing of this request, advised the druggist that Dr. A had no right to any information concerning prescriptions that Dr. X had written. Some of the prescriptions written by Dr. X are on blanks with his name only at the head. Dr. A asserts that Dr. X has no right to use individual blanks under the terms of their contract. Should the list be furnished to Dr. A? J. K. S.

ANSWER.—The physician who writes it, the pharmacist who fills it and the patient for whom it was written are the only parties who have any right to a prescription. The fact that Dr. X wrote prescriptions on several kinds of stationery is immaterial. They were all signed by Dr. X and except through the courtesy of Dr. X should not be subjected to inspection. True, the prescription blanks of Dr. A announce that Dr. X and Dr. Y are his "associates," and our correspondent, a pharmacist, has knowledge that some kind of a contract has been entered into by A and X. The terms of the contract are not here defined and the relationship implied in announcing X as an "associate" is too indefinite to warrant the pharmacist giving A information concerning the prescriptions in question. In other words, physicians "associate" in the use of common offices; in assisting each other when more than one person is required to render needed service; in one substituting for the other when the principal attendant is engaged, or on his request; in one performing laboratory work or making special investigations for the other; and occasionally physicians are associated in a full partnership as in any business. Only in a full partnership is one of the associated physicians warranted in treating the business acts—the prescriptions, for example—of the other as his own, or asking another to regard them in this light.

The best course for the pharmacist to follow is to provide X with the data A requests and advise A of this, leaving A to obtain the information from X.

ORGANIC AND INORGANIC CALCIUM ACID PHOSPHATE

To the Editor:—A few days ago a salesman for a well-known baking-powder was in our hospital trying to supply us with this particular brand. He made the statement that the calcium acid phosphate used was obtained from beef and mutton bones, and from the fact that it was obtained from the organic kingdom it was therefore more suitable for human use. He further stated that it was possible to tell by suitable tests whether this substance had been obtained from an organic or an inorganic source. In the books at my disposal I have been unable to verify his statements, and have always had the idea that no matter what the source, the chemical was exactly the same. Kindly inform me whether there is any difference in calcium acid phosphate, either chemically or biologically, obtained from the two sources mentioned above.

F. E. CLOUGH, Lead, S. Dak.

ANSWER.—Calcium acid phosphate (primary calcium phosphate) $Ca(H_2PO_4)_2$ if pure, is constant in chemical composition and physiologic action no matter whence obtained. Commercial calcium acid phosphate is probably never pure, but we know of no reason why that obtained from mineral phosphates should be more nearly pure than that obtained from bone-ash. It should be understood that the first step in the preparation of calcium acid phosphate from bones is the production of bone-ash. Since the substance is produced by action of high heat, all vestige of organic material is destroyed and the residue contains the same inorganic calcium phosphate which is found in the natural deposits.

TREATMENT OF TUBERCULOSIS IN EUROPE

To the Editor:—Will you inform me as to the present status of the sanatorium treatment of tuberculosis in Europe? A few years ago one of our leading journals stated that it had been thoroughly tried in Germany and found unsatisfactory, and that instead societies were being formed and literature circulated for the instruction of the public in prevention.

G. T. WILLIAMS, Crawfordsville, Ind.

ANSWER.—There is no tendency to abandon the use of sanatoriums in Europe in the treatment of tuberculosis. Perhaps our correspondent has received the impression he manifests from the fact that emphasis is being laid on prevention rather than on sanatorium treatment; that is to say, it is recognized as unwise to limit activities to sanatoriums when so much can be done by the education of the people in better hygiene and by improved conditions. These things prevent tuberculosis, but care is still being given in sanatoriums to cases that develop. This is true not only in Europe but in this country.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

CONTROL OF DEFECTIVES

One of the most interesting reports presented before the meeting of the American Institute of Criminal Law and Criminology, recently held in Milwaukee, was that of a committee appointed by the Wisconsin branch of the institute, on the sterilization of criminals and defectives. The subjects assigned to this committee were as follows:

1. In what ways can propagation of habitual criminals, imbeciles and lunatics be prevented?

2. Should sterilization of such persons in proper cases be authorized by law?

In modern times the accumulation of large amounts of materials in the shape of clinical statistics published by hospitals and medical journals has established the fact beyond question that heredity plays an essential part in the etiology of certain neuropathic conditions. In recent years social workers likewise have collected data showing the effect of heredity, so that the doctrine of hereditary transmission is now incontestably established.

It will be only after the united collaboration of many investigators and the study of vast data of family traits and family pedigrees that we shall be able to find out the fixed laws which govern heredity.

In view of the fact that the laws of heredity applicable to the classes in question have not been ascertained, the committee presented a series of actual family pedigrees showing to a certain extent the effect of hereditary transmission. The charts presented had been prepared by Davenport, Rosser, Goddard and others. They illustrated in the opinion of the committee:

1. The necessity of the compilation of the genealogies of the institutional charges, including physical weaknesses, diseases to which the different members were liable and causes of death. This can best be done by the state through trained field work-

ers under the direction and control of the various charitable and penal organizations.

2. The need for the establishing of a chair of eugenics in the various colleges and universities.

3. The need for the creation and equipment of at least one laboratory for the study of mental diseases in each state, to be located preferably at the institution nearest to a college or university having a medical school.

The combined efforts of the genealogists and eugenists will eventually lead to the discovery of the laws of heredity applicable to the human race. This, however, will not suffice, for the reason that the principles of prepotency or offset are equally important in ultimately working out the salvation of the race by better breeding. Given the laws of heredity and the principles of prepotency, they can be taught in the home and public school to the child of tender years. With this knowledge from infancy the normal, mature person, contemplating marriage, will demand genealogies and will shun any alliance which can result only in suffering to the parent and the child.

There are three methods by which the propagation of these defective classes can be influenced: by regulation of marriage, by effective sequestration, and by destroying the power of the individual to produce offspring.

Laws have been passed attempting to regulate marriage. There is no doubt but that conditions have been somewhat improved by such laws. It is wise to withdraw the approval of the state from the marital union of persons unfitted to care for and train the children they might produce.

Sequestration, if perfect, would be absolutely effective. It is doubtful if it can be made complete, however, especially in men. Among the insane, parole, in some cases, appears not only justifiable but beneficial. Among the feeble-minded, absolute enforcement of sequestration would appear unwise. In such cases it would unnecessarily tend to separate some children from their families permanently; and moreover, the higher grades of the feeble-minded are instinctive tramps, and absolute sequestration would mean a closeness of confinement totally at variance with the idea that institutions should be colonies, with almost the freedom of action of the country village, rather than places of confinement.

The jury trial is always available, and it is difficult to make the average jury believe that there is just cause for retention under the care of the state of high-grade imbeciles, who are often of prepossessing appearance, especially when the moral qualities are chiefly at fault. With girls retention is easier than with boys, as their tendencies for elopement are not so marked.

It cannot be doubted that sequestration is in some measure effective. For the last few years a steady decrease has been noted in the number of applications to the Wisconsin Home for Feeble-Minded, due, the committee believes, to the great number of highest-grade feeble-minded women who have been retained under the shelter of that institution.

In most of the few cases in which the higher-grade girls have been taken from state care, the results have been regretable, but conditions have been better than in some states in which the control of the state is nominal. The superintendent of one institution asserts that he is now receiving the children of the girls released.

The number of feeble-minded, including juvenile delinquents (the criminal feeble-minded), is enormous, Dr. Goddard of the department of research in the New Jersey institution, estimates the present number in the United States at 300,000. He points out, especially, the large proportion of feeble-minded in reform schools, placing them at not less than 25 per cent. These are the "criminals" coming within the scope of the committee's activity, because their condition is permanent. They are usually sufficiently bright to mate with others of about the same mental status, and begin new lines of degeneracy. Unless they are under guardianship, they do not have the concentration of purpose to make a living for themselves and those dependent on them, or judgment to prefer right-doing to wrong-doing, or the will-power to resist the ordinary temptations of life, which come to all. Punishment has little effect on them, and reasoning is wasted. They are "repeaters" in crime. They are generally the offspring of those who have weakened their moral control through constant self-indulgence. They would probably belong in the class considered by the committee as proper subjects for surgical interference. From them spring all forms of neurotic defects.

For the purpose now under consideration, feeble-mindedness is the most important subject, and with it epilepsy may properly be classed, as feeble-minded or epileptic parents almost invariably transmit their qualities to their children in varying degrees; such offspring on account of their incapacities, misdeeds or crimes frequently become public charges or come into conflict with the authorities of the law.

Certain types of insanity, notably dementia praecox and manic-depressive insanity in the parents, show a marked tendency to reproduce themselves in the children as feeble-mindedness, criminality and other forms of degeneracy.

Neurotics reproduce neurotics with tendencies to neuroses, insanity, feeble-mindedness, drunkenness, pauperism and criminality. Insanity is more often inherited from the insane. Feeble-mindedness is the result of all neuroses, since any check to the growth of the brain must affect the development of the mind. In short, except in rare instances, feeble-mindedness, insanity, criminality, inebriety and pauperism may be looked on as allied conditions with marked tendencies to be reproduced in one or another form in the children of persons affected with such infirmities, and with a strong tendency for the defects to become more marked with each succeeding generation and to be accentuated by unions between such defectives, as persons belonging to these various classes have a strong affinity for others of their kind.

Efforts have been made to find a family in which two defectives have united and produced normal children. No record of such a family has been found.

That the insane are increasing much faster than the general population is undoubted. The census reports show this. The increase has aroused public interest to such an extent that several states have passed laws for the absolute prevention of increase, by operation. The decision in each state is left to a commission. The committee has summarized the law bearing on the situation in each of the states in which there has been legislation.[1]

Society Proceedings

COMING MEETINGS

American Physiological Society, Cleveland, Dec. 26-28.
Southern Surg. and Gynec. Assn., Old Point Comfort, Va., Dec. 17-19.
Western Surgical and Gynecolog. Assn., Cincinnati, Dec. 20-21.

PENNSYLVANIA STATE MEDICAL ASSOCIATION

Sixty-Second Annual Meeting, held in Scranton, Sept. 23-26, 1912

(Concluded from page 1637)

The Treatment of Flat-Foot: A Plea Against the Misuse of the Insole

DR. DEFOREST P. WILLARD, Philadelphia: About one-fourth of the deformities of the body are due to weakness of the tarsal arch. For the support of the tarsal arch we have to depend on the sling-like action of the muscles of the leg, the principal of which are the tibials on the inner side and the peroneals on the outer side. Any weakness of the inner muscles or overaction of the outer muscles will cause the foot to evert when the body weight is placed on it, thus throwing a strain on the plantar fascia and the ligaments of the tarsal joints; these gradually give way and the normal arch disappears. In the treatment, especially of the pronated type, there are four indications which must be complied with, namely, to strengthen the weakened muscles, to allow the foot to assume its normal position, to relieve the strain on these muscles by throwing the line of weight-bearing to the outside of the foot, and to support the arch until the muscles are ready to take

1. See THE JOURNAL, Oct. 19, 1912, p. 1474.

up their full work. To accomplish this we may use muscular exercises to strengthen the weakened muscles and to stretch the contracted ones, massage and passive motion, hot-air treatment, hot and cold water douches. The second essential is a proper shoe to give support to the foot. The use of arch-supports is the commonest form of treatment and the easiest to prescribe, while at the same time it does the most harm. At the best such a plate will be only a temporary support to the arch and in no way disposes of the causative factors of the condition.

Paraplegia in Pseudoleukemia; Treatment by Laminectomy and the Roentgen Rays

DR. CHARLES K. MILLS and DR. EDWARD MARTIN, Philadelphia: A woman, aged 35, had suffered several years from what had been designated as pseudoleukemia. Three or four months prior to admission she had had a severe pain in the back between the shoulder blades, and a week before admission suffered from paresis of her lower extremities, which at the time of admission had developed into total paraplegia. There was also loss of bladder control with foot-clonus and slight Babinski on the left side. Laminectomy was performed. On removing the lamina of the third vertebra a growth was found involving the spinal membrane and encircling and infiltrating the cord. As much as possible of this was removed and the patient made a good surgical recovery. The symptoms were only slightly relieved. Roentgenotherapy was carried on, and three months after operation the patient reported that her suffering was greatly diminished.

Use and Abuse of Thyroid Extract in Obesity

DR. HENRY D. JUMP, Philadelphia: There are two varieties of obesity, exogenous and endogenous. The latter is due to decreased activity of the thyroid, and hence thyroid treatment gives the best results. When obesity is associated with chronic nephritis, the thyroid treatment is of great value. Evil effects result from overdosage and uncertainty of dosage. The dose should be increased gradually. If overdosage is persisted in, death may result from heart failure. Thyroid must be classed as a dangerous remedy not to be used by a patient who is not under observation by a physician.

The Medical Aspect of Pulmonary Surgery

DR. H. R. M. LANDIS, Philadelphia: In the treatment of certain of the affections of the lungs and pleuræ it is essential to success that the internist should seek surgical advice in doubtful cases, much earlier than is at present customary. That some of the diseases affecting the lungs and pleuræ can be treated more successfully by surgical methods must be apparent to any one who has followed the reports from some of the surgical clinics abroad and in this country. Of the conditions which especially demand surgical interference the first in importance are those due to suppuration, such as pulmonary abscess, acute or chronic, and empyema and bronchiectasis, in which surgery is the only hope of relief. The form of surgical treatment which promises most in pulmonary tuberculosis is the production of artificial pneumothorax. This is not to be recommended in cases of incipient or moderately advanced tuberculosis, if an arrest of the disease is being brought about by the usual hygienic measures. Other operative procedures for the relief of tuberculosis involve the resection of a portion of one or all the ribs on one side. Even in advanced cases of pulmonary tuberculosis the patients stand operative interference surprisingly well.

Intrathoracic Tumors

DR. JOSEPH SAILER and DR. ROBERT G. TORREY, Philadelphia: These tumors are easy to diagnose but are often mistaken for pulmonary tuberculosis. Diagnosis is useful only in preventing needless expense for sanatorium treatment. Medical treatment of any kind is unsatisfactory. Carcinoma is unsuitable for operative interference although successful cases have been reported. A review of reported cases of sarcoma leads to the belief that these tumors, when occurring in the lung, do not tend to metastases and might be removed with permanent good results. Secondary tumors are common in the lungs.

DISCUSSION

DR. J. H. JOPSON, Philadelphia: A large number of cases of empyema in which there are encysted interlobular collections are overlooked. Finally when these cases are observed by the surgeon they are in a condition which hardly admits of cure. The physical signs are those of empyema but on a small scale. Cases which are often regarded as unresolved pneumonia are likely to be some form of empyema. I think that the reason the needle fails in so many cases to discover these collections is that we do not bear in mind the natural fissures of the lung.

DR. ALFRED HAND, JR., Philadelphia: It is often difficult to place the needle in the collection of pus. In the last few years I have used a brief general anesthesia in making these explorations and it has helped me a great deal. With the child absolutely relaxed we have it under perfect control and I do not have to repeat the exploratory puncture so often as I formerly did.

DR. SAMUEL ROBINSON, Boston: I remember the advice given by the late Maurice Richardson in operating for empyema. He was in the habit of saying to the students: "Make large holes; get the pus out of the chest." As I have gone on I see that he was right. I am not prepared, however, to give up all of the suction methods through a small opening; but we as surgeons ought to know from the chart to the patient's condition that these methods are not always sufficient, and, if necessary, we should make another and larger hole in order to make sure that the pus is out of the chest. Artificial pneumothorax is a piece of work that the internist must carry on. Adhesions do not prevent the entrance of nitrogen gas so often as one would think. In forty-five out of fifty cases one can introduce it throughout the pleural sac to a greater or less extent.

Acute Membranous Vaginitis in Pregnancy

DR. GEORGE ERETY SHOEMAKER, Philadelphia: This complication of late pregnancy is unique in my experience and that of several of my friends. My first case was in a woman of 36, pregnant eight months, who suffered from soreness, swelling and intense itching of the vulva, associated with a copious discharge, partly fluid and partly of cheesy masses. The solid material was not adherent and could be removed without causing bleeding. There was no ulceration. The surface of the vagina and vulva was wiped with a 20 per cent. argyrol solution and a small tampon of the same solution inserted. Daily irrigation with potassium permanganate, 1:500, was carried out. Cure occurred in three weeks and one week later birth was given to a healthy child. The second case was in a woman eight months pregnant with twins. The condition was similar to that in the previous case and had increased in severity for three weeks in spite of treatment. The same treatment was carried out as in the first case with equally good results. Bacteriologic examination showed in both cases the enterococcus, the solid masses being made up entirely of these germs; in the second case there was also present the *Oidium albicans*.

Early Diagnosis of Gastric Carcinoma

DR. JOHN HERR MUSSER, Philadelphia: An analysis of sixty-nine cases of gastric cancer, verified by autopsy and by operation, showed that in 60 per cent. of the cases pain was either the first or second complaint of the patient; 43 per cent. of the patients complained of vomiting as the first or second complaint, while in a comparatively small percentage there were complaints of indigestion, and what is usually held to be a typical symptomatology—vague distress, some nausea, and flatulency coming after midlife in a patient who has before this been free of gastric trouble.

Affections of the Gall-Bladder Which May Produce Epigastric Pain

DR. JOSEPH SAILER, Philadelphia: Pain in the right upper quadrant of the abdomen may be due either to thoracic or to abdominal lesions. The thoracic lesions are (1) pleurisy, either of the lower lateral aspect of the right chest or of the adjacent edge of the diaphragm; (2) lesions of the intercostal nerves or of the ganglia of the posterior roots, and (3) acute endo-

carditis. The abdominal conditions other than those involving the liver and the biliary tract are appendicitis, gastric and duodenal ulcer, renal calculus, subdiaphragmatic abscess, lesions of the colon, particularly of the hepatic flexure, adhesions and pancreatitis. The conditions of the liver and the biliary tract may be classified as follows: (1) lesions involving the capsule of the liver, acute distention, particularly an acute cardiac decompensation, carcinoma, abscess and traumatism; (2) obstruction of the biliary tract due to stones, inflammation, parasites, stricture and pressure; (3) rupture of the gall-bladder or bile ducts; (4) extension of inflammation to the adjacent peritoneum; (5) hepatalgia. These different forms of pain differ somewhat in character but not so greatly that the various types may be regarded as pathognomonic. Associated signs and symptoms, such as tenderness, jaundice, etc., are of importance in reaching the correct diagnosis.

Surgical Aspects of Epigastric Pain

DR. JOHN H. JOPSON, Philadelphia: Epigastric pain is a symptom of prime importance in a large number of grave abdominal lesions. We may discuss the symptom of epigastric pain from the points of view of: (1) evidence of the existence and the general location of the morbid process causing it; (2) as an aid to differential diagnosis; (3) as an indication for surgical intervention. The commonest cause of epigastric pain is not located in the upper abdomen but in the right iliac fossa, namely, the appendix. Among the medical lesions two of the most important giving rise to epigastric pain are the referred pain in pleurisy and pneumonia, and the lightning-pains and gastric crises of locomotor ataxia. In some cases pain outweighs in importance any other symptom and is less open to erroneous interpretations. The persistent increase of pain in either acute or chronic lesions is fairly indicative of surgical intervention.

DISCUSSION

DR. WILLIAM H. CORRIGAN, Wilkes-Barre: It is on the early recognition of the early phenomena due to the disturbance of the physiologic processes that the diagnosis of the lesion is to be made, regardless of pain. There must be, first, comprehension of the normal physiologic processes in order that the abnormal may be appreciated, and, second, a mental picture of the pathologic lesion whose nature and location would logically explain the symptoms. Epigastric pain is not a persistent concomitant of the pathologic lesion. It is contingent on variable conditions and is not indicative of the extent, danger or existence of pathologic lesions. Surgery must conform to the natural law, and knowledge should precede action. The better the physiologist, the better the diagnostician, the better the surgeon.

DR. EDWIN ZUGSMITH, Pittsburgh: Epigastric pain is of value to the physician because of its variations and associations. Tenderness, as a rule, corresponds to the site of the trouble. While gastric and duodenal ulcer present the symptom of pain after eating, so also do many cases of gall-bladder disease, chronic appendicitis and adhesions. The point of differentiation lies in the intensity of the pain. The pain of ulcer is more severe than the corresponding pain of gall-bladder disease or appendicitis. Gall-bladder pains are deceptive and are not always located in the epigastrium. We need a better test than we have for the diagnosis of pancreatic disturbance. In appendicitis the tenderness that comes from a sudden relief of pressure is just as important as tenderness which results from a direct pressure. One of the most important causes of epigastric pain is the existence of adhesions. These are more common than before we resorted to abdominal surgery. I do not believe that ulcer is dependent on hyperacidity, but that the only thing that will account for ulcer in the stomach and duodenum are conditions connected with the blood and blood-vessels. Surgery is not the final word in gastric ulcer at present nor will it be for some time to come. I do not recall in my experience many cases in which ulcer has developed carcinoma. Neither can I recall a single case of carcinoma which had an ulcer history.

DR. WILLIAM EGBERT ROBERTSON, Philadelphia: I should like to ask Dr. Sailer what his experience is in respect to abdominal pain as an early symptom of some cases of pulmonary tuberculosis. Its significance I am not able to explain, but the fact remains that in certain cases that ultimately develop frank tuberculosis, pain is the initial symptom and has been acute.

DR. JOSEPH SAILER, Philadelphia: I have seen two cases of gastric ulcer in which practically the only symptom that occurred was a persistent regurgitation of food in small amounts. Neither patient had any pain after meals. I do not believe that a diagnosis of gastric carcinoma can be made solely from an examination of the gastric contents. In several cases of acute miliary tuberculosis, chiefly of the lungs, but on examination found also in other organs of the body, the epigastric pain has been severe. I am unable to explain this. One can surmise that it is, perhaps, similar to the epigastric pain occurring in pleurisy, and it might be that a more accurate and painstaking examination of the pleura, the intercostal nerve or possibly of the ganglia on the posterior roots might show the existence of some lesion. We know that this pain sometimes occurs in herpes zoster, that herpes zoster is also not infrequently associated with disease of the ganglia and the posterior roots, and that the pain in the epigastrium may occur before the appearance of the herpetic eruption.

Isolated Sclerotic Involvement of the Mitral Valve

DR. ROBERT N. WILLSON, JR., Philadelphia: The frequency of occurrence of mitral valve deformity and disease, independent of and in the absence of other cardiac valve implication, has received attention only, as a rule, from the point of view of vegetative endocarditis. It has been described customarily as rheumatic in origin and, at least in its acute forms, has been regarded as a part of true bacterial rheumatic disease. Sclerotic thickening and deformity causing insufficiency or stenosis, and often both anatomic effects, have received scant attention at the hands of students of the heart. In the wards and at autopsy I have been struck by the purely sclerotic nature of occasional mitral lesions which, during life, I had been led by the history and course of the case to regard as subacute recrudescences of a bacterial endocarditis of a purely vegetative type. I know of no clinical method of distinguishing the sclerotic type of valvular disease from the vegetative, except in the probable exclusion of syphilis from the etiology by the Wassermann test. I am inclined to believe that all patients with sclerosis of the mitral valve, whether this is associated with valvular involvements or isolated, will be found also to present distinctly sclerotic arteries, irrespective of the age. The only certain prophylactic measure would be prevention of marriage among the unfit.

Proctoclysis as a Curative and Prophylactic Agent in Primary and Secondary Acute Nephritis in Children

DR. HARRY LOWENBURG, Philadelphia: Sodium chlorid does not increase water retention in nephritis. It inhibits the action of the toxic agent. Alkalies assist the action of the neutral salts. All other symptoms of acute nephritis are dissipated or prevented by a combination of alkalies and sodium chlorid. Acute nephritis is benefited by large amounts of water. Sodium chlorid may be administered by proctoclysis, hypodermoclysis or intravenous injection. One advantage of proctoclysis is the reduction of the kidney acidosis during the elimination of the water absorbed. Edema does not contraindicate the use of sodium chlorid in nephritis. In the treatment of the acute infectious diseases and toxic states, and before and after ether anesthesia, continuous or intermittent proctoclysis with normal saline solution as urgency may require, together with the administration of alkalies, is recommended. It would appear that Fischer's theory finds verification in the protocols of these cases.

The Relation of Animal Fat to Tubercle Bacillus Fat

DR. WILLIAM CHARLES WHITE, Pittsburgh: The relation between the fats stored in the animal body, and the fat in the tubercle bacillus growing in this animal body, seems at first glance a very indefinite one; yet an attempt to establish such a relation yields many points of interest, the correlation of which establishes a connection between the two which is

apparently very close. The storage of fat in bodies that are the seat of tuberculous infection is usually the basis of a favorable prognosis. This storage of fat, too, is the main object of the tripod of rest, fresh air and feeding, which forms the foundation of our treatment in this disease. While we have not been able to determine that such methods as we have employed in our work offer a means of distinguishing the human and bovine types of organism, still the findings suggest the possibility that in the relation of animal fat to tubercle bacilli there may be found some light on this question.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Indianapolis, Oct. 10-11, 1912

(Concluded from page 1614)

Nervousness in Children

DR. C. F. NEU, Indianapolis: The solution of this problem can never be reached by the sociologist alone, or by the economist, or by the educationalist, or by the disciplinarian, or even by the physician, but by the closest cooperation of all. The sociologist must seek constantly to improve the social and moral conditions of life; the economist to determine ways and means to alleviate the intense struggle for existence; the educationalist to understand and direct better the intellectual capabilities; the disciplinarian to instill self-reverence, self-knowledge and self-control, and the physician to supervise and direct all such measures as will be most conducive to the development of a healthy body and mind.

DISCUSSION

DR. A. E. STERNE, Indianapolis: There are two classes of nervous children—those who have something the matter with them, and those who suffer from too much parents. Each child is a law unto itself; it must be studied individually. Nervousness in children is due almost always—unless they are sick—to lack of self-control, and that can be taught the child and must be taught the child. Insane people are sick people, they should be treated as sick people, they should be examined as carefully as any other sick persons, and in a great many cases we will find that the mental derangement is the result of internal illness. The trouble is we have no opportunity to study these conditions. When a person becomes unmanageable in the home of general hospital we have no place in this state to send that patient, except the insane asylum or some private institution. We have no detention hospital or observation hospital.

DR. F. F. HUTCHINS, Indianapolis: There are two kinds of children—neurotic and non-neurotic, and we need them both. The non-neurotic child is the cart horse that carries the load; but we need the others, too. Where are we going to get men with dreams, artists and literary men to lead us from the common to the beautiful things of life? We get them from neurotic children. The history of every man who has arrived at distinction in the realms of art or science shows this. But it is a combination of the two—common sense and imagination—that makes the broad, all-round man of whom we are so proud.

DR. F. B. WYNN, Indianapolis: This thing which we call in the life of the child and adult, "habit," really has a physical basis in the individual, and hence the necessity of recognizing that it is necessary to do something while the child is growing, when the central nervous system can be molded.

Antityphoid Inoculation

DR. WILLIAM SHIMER, Indianapolis: Antityphoid vaccination seldom gives severe reaction. Most reactions have disappeared in twenty-four hours. Antityphoid vaccination is an almost absolute protection against typhoid infection, particularly that of "bacilli carriers." Universal antityphoid vaccination will do as much to eliminate typhoid as small-pox vaccination has done to eliminate small-pox.

DISCUSSION

DR. C. S. WOODS, Indianapolis: We have not had enough experience with antityphoid vaccine to determine how long we are going to be immune after inoculation, but we do feel, nevertheless, that under certain conditions, particularly in the army, where great bodies of men are moving from place to place, and for those people whose business or occupation calls them from place to place, antityphoid inoculation should always be done.

DR. A. W. BRAYTON, Indianapolis: I regard it as a crime to ask any young woman to go into an institution where she is laying down her life, perhaps, without having prevention against typhoid fever, for the chances of having it in a hospital are eight to one against having it as a school teacher or in the ordinary walks of life. I hope each of us will become advocates of typhoid prevention in our respective spheres. I do believe that we have before us now the possibility of stamping out two of the great captains of the messengers of death—typhoid fever and syphilis—in a higher degree than ever before. There will come a time when it will not be so important to teach the physicians as to teach the laity. The laity is becoming wise, and when we have a wise laity to deal with, the nation can get along with a poorly educated profession, or better yet, compel the medical profession to keep abreast of medical science as taught in biologic laboratories.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

Thirty-Eighth Annual Meeting, held at Chicago, Oct. 22-24, 1912

(Concluded from page 1736)

Training of Specialists

DR. LOUIS FRANK, Louisville, Ky.: I often wonder if four years of study in a medical school really qualifies one to undertake all the responsibilities of practice. My belief is that it does not. Obstetrics must be better taught and must be viewed from a broad point of view. The branch is poorly taught and the practice as generally carried on is worse. Most obstetricians, whether teachers or practitioners, have been deprived of such surgery as rightly and properly they should do, or have surrendered it. The surgeon of to-day should no more be called on to do a primary perineorrhaphy, or other operative procedure in the lying-in room, than to put on forceps, do a version or an *accouchement forcé;* yet our obstetricians, for the greater part, assign such work to the surgeons, not only in practice but in teaching the subject. Our students must have better training—a larger actual experience—hospital training and more rigid requirements before entering this field of practice. Specialists cannot be made in six or eight weeks, yet certificates of proficiency are granted by postgraduate schools following courses of such duration, during which time the sole opportunity for qualification has been to observe seventy-five or a hundred operations and, for a fee, to do two or four operations with the assistance (?) of the tutor. Let us have special examinations for those members of the profession who desire to wield the scalpel, with additional requirements in an increased hospital experience for all specialists, surgical, obstetric and medical. Then recognizing as such those who are able to qualify as specialists, let us compel them to adhere to such practice and not surreptitiously engage in work other than that for which they declare themselves particularly qualified.

The Stomach From the Point of View of the General Practitioner, the Specialist and the Surgeon

DR. CHARLES G. STOCKTON, Buffalo: I have had frequent opportunity of observing the working of good and evil in the professional management of stomach diseases. This field is rich in illustrations because derangements of the stomach commonly form a part of pathology starting in almost any part of the economy, and because disease arising in the stomach often concerns directly the physician, the specialist and the surgeon. Few regions more generously reward the correlated study of physiology and chemistry, of psychology and general medicine, of special technic and wise surgery. Let us review two conspicuously familiar, illustrative pathologic instances.

1. A case of unrecognized tuberculosis, with gastric irritability. A specialist, after analysis of stomach contents, recognizes a gastric neurosis and treats it by lavage and restricted diet. Improvement is not forthcoming, so a surgeon is invited. He sees a reflex, secondary to chronic appendicitis, and removes the innocent organ. Following a brief period of improvement, the result of psychic impression and suggestion, the case marches on; there is now fever, cough and expectoration, heralding infiltration, softening and vomiting. It was a case for general medicine, not one for specialist or surgeon; yet it might have been, and both might better have studied the case jointly with the family physician until the diagnosis was established.

2. A case of gastric atony, with anemia, emaciation and mental depression; with constipation, slight hepatic derangement, tenderness and recurring bilious attacks. The general practitioner perceived the denutrition, yet harmed the patient with superalimentation and chalybeates. A surgeon, noting the gastric distress, the moderate motor insufficiency, the colonic stasis and the disturbed liver, felt that the primary fault was an infected and irritable gall-bladder, and drained the useful organ with no worse effect than making it small, limiting its movements and binding it by adhesions to the surrounding parts. In fact, the case was one for the skilful specialist, who by local treatment, carefully suited diet and general development of the patient, in the end relieved the symptoms; then, by educating the patient as to his dietetic limitations and necessities, by teaching forbearance, willingness and waiting, had the satisfaction of seeing him restored to reasonable health.

Biologic Interpretation of Abdominal Pain and Its Surgical Relation

DR. GEORGE W. CRILE, Cleveland: The only types of infections that are associated with pain are those in which the infection may be spread by muscular action or those in which the fixation of parts by continued muscular rigidity is an advantage. And further, we find as a striking corollary that the type of infection that may cause muscular action when it attacks one region of the body may cause no such action when it attacks another region. Among 8,684 abdominal sections performed by my associates, Drs. Bunts and Lower, and myself in the Lakeside Surgical Service, 923 were on the stomach and intestines, 725 on the urinary tract, 744 on the gall-bladder, 2,130 on the female genital organs and 3,988 on the appendix. In a recent conference, after tabulating all of our cases, we felt that certain conclusions could be drawn: Certain lesions of the viscera mentioned cause pain and indigestion, whereas lesions of the solid viscera cause usually no primary pain; lesions of the hollow viscera causing no pain are rarely benefited by operation; most cases of painful indigestion, if not duodenal or gastric ulcers, are extragastric; the cause of the pain is the stimulus to muscular action; pain is a damaging agency to health; acute abdominal pain is usually surgical; these phenomena obey a general biologic law of adaptation; the adequate stimulus of many of the phenomena acts through the brain; when the brain is disconnected these phenomena disappear and thus the mortality and the morbidity may be placed measurably further under the surgeon's control.

The Operative Treatment of Prostatic Hypertrophy

DR. HUGH CABOT, Boston: The relative merits of the suprapubic and perineal operations in their present state of development seem to me to be as follows: The suprapubic route is the anatomically correct approach. It attacks the hypertrophied portion at the point where it can be reached with less destruction of tissue and with the greatest certainty of complete removal of the obstructing portion. It does less damage to other structures, interferes less with other functions and is followed by fewer complications. It is more certain to result in cure. The perineal operation shows at present a definitely lower mortality. It is a more difficult surgical procedure, no matter what technic be selected. It is more likely to do damage to other structures and functions and is less certain to result in cure. Of the various types of perineal operation, that of Proust, combining the prerectal incision with the intra-urethral enucleation, is best adapted for the uses of the average surgeon. The perineal operation survives only on account of certain contra-indications to the suprapubic method.

DISCUSSION

DR. A. J. OCHSNER, Chicago: What I have to say is based on experience obtained twenty years ago when lithotomy was done through the perineum by the surgeons whom I assisted at that time. My observation then was that these surgeons would introduce a staff into the urethra, make an incision in the perineum, would pass the staff with a button-knife, incise the membranous or prostatic urethra and the neck of the bladder, remove the stone, and leave the patient alone; everything would go well, and they never had difficulty with fistula or any other complication. Presently prostatectomy was advocated, and I did a number of suprapubic prostatectomies. Things went on nicely until I lost two patients in one day. Then I considered the perineal route and followed Ferguson, Murphy and later Young, until one day it occurred to me that we did not get at the prostate so well in that way as we used to from above, and so I now make the old-fashioned lithotomy incision with button-knife, introduce the finger into the bladder, enucleate the prostate, make a suprapubic operation through the old lithotomy incision, and now it is easy, and we have the advantages of the two operations.

DR. BRANSFORD LEWIS, St. Louis: I would like to emphasize the importance of preparatory treatment, bringing the patient up to a physical condition in which he is likely to go through the operation for the removal of the prostate with success.

DR. WILLIAM J. MAYO, Rochester, Minn.: We have had this experience in our prostatectomies, and especially for malignant disease: in making a complete physical examination of all males that present themselves in the clinic, we have found that hypertrophy of the prostate was not at all infrequent in men who gave no symptoms whatever. The hypertrophy of the prostate in these patients does not begin to trouble them until malignant disease develops. When we have a patient who is known to have prostatic hypertrophy which causes a great deal of trouble, the reason for it will be found in the secondary development of malignant disease in something like 10 per cent. of the cases. In regard to the operation, we have gradually come around to the suprapubic, for the reason that this operation gives one the opportunity to do things that are indicated in the particular case, and as safely as by any other route.

DR. E. GUSTAV KOLISCHER, Chicago: We cannot fairly compare the results of perineal prostatectomy, which is a favorite method, with the results of suprapubic prostatectomy, which is done in the old-fashioned way. Suprapubic prostatectomy is easy, provided we can expose freely the parts on which we operate.

DR. SAMUEL J. MIXTER, Boston: The mortality of the suprapubic and perineal operations can hardly be compared, because the suprapubic operation may be difficult in one case, while the perineal may be easy in another. In other words, the cases should be selected, not with the idea of which is the easier operation, but in general one should be guided by his judgment as to which is the better operation in a given case.

Sixty Laminectomies for Spinal Disease

DR. CHARLES A. ELSBERG, New York: My observations are based on sixty primary laminectomies: 22 for tumor, 9 for section of posterior spinal roots, 4 for inflammatory bone disease, 5 for old fracture of the spine, 2 for syringomyelia, 1 for intramedullary cyst, 1 for aneurysm of spinal vessels, 3 for a peculiar disease of the cauda equina and 13 exploratory. The dangers of a laminectomy should be very small, but spinal surgery is a special field demanding special training and experience. The value of the Wassermann reaction in making the indications for operation in spinal disease has been overestimated. In several instances a glioma was found at operation in patients with a positive seroreaction. It is almost as great

an error to allow a patient with a possible spinal tumor to become totally paraplegic while antisyphilitic remedies are being tried as to allow a patient with a possible specific brain tumor to become blind while mercury is being given. The correct diagnosis of the level of the lesion should usually be made, but one must not forget that a stasis of fluid above the lesion may give level signs above the true level. Secondary degenerations may rarely cause a shifting upward of the level signs. The supposed danger from the sudden escape of cerebrospinal fluid during an operation is not great. Retention of urine may occur after a spinal operation, but the frequency of its occurrence is in direct proportion to the injury done to the cord. A marked abdominal distention often occurs after laminectomy in the lower dorsal region. After complete laminectomy, the function of the spine is fully recovered because the main support depends on the vertebral bodies. As many as seven spines and laminae can be removed and perfect function of the spine recovered. Some stiffness and rigidity may remain for a few months, especially after operations in the lower dorsal and lumbar regions. Free mobility is most quickly recovered after laminectomy in the cervical region. In old fractures of the spine, with evidences of compression of the cord, the results of operations are little short of brilliant. Ultraconservatism is indicated in fresh fracture of the spine and only few patients should be subjected to an operation. But in the patients in whom symptoms only appear after weeks or months after the injury and in the patients in whom there is improvement at first and stationary symptoms persist, a decompressive laminectomy should be done. Marked angulation of the cord can be straightened out, intramedullary cysts drained, etc. Laminectomy for decompressive purposes is often indicated; the opening of the spinal canal may and often does have a profound effect on the spinal cord, which may act beneficially on some spinal diseases whose nature is as yet not understood and whose pathology is unknown.

The removal of an extramedullary tumor of the spinal cord is one of the most satisfactory operations in surgery. The operation can usually be done in less than half an hour, and the danger is small. Two stage operations are indicated in intramedullary growths and in the giant-tumors of the roots of the cauda equina. The treatment of localized intramedullary tumors by the method of extrusion has opened up a new field. It is both feasible and safe to incise the cord in order to allow the extrusion of intramedullary tumors, to empty cysts of the cord for decompressive purposes in infiltrating growths and in spinal gliosis.

Pancreatic Lymphangitis and Chronic Pancreatitis

DR. JOHN B. DEAVER, Philadelphia: Pancreatitis must still be studied with an open mind in regard to its etiology and particularly in respect to its relation to chronic inflammatory diseases of the alimentary tract that result in retroperitoneal lymphangitis. Treatment is promising in the early stages and practically hopeless when the stage of interstitial deposit of fibrous tissue is reached. Our most promising lead for treatment consists in the means already devised for the treatment of chronic inflammation in the organs with which pancreatitis is commonly associated and on which it appears to be dependent. Pancreatitis is common and not rare. Its presence should be suspected in all cases of obscure upper abdominal indigestion and like other chronic inflammatory lesions of the abdomen, when it is uninfluenced in a reasonable length of time by medical measures it should receive surgical attention.

Surgical Management of Exophthalmic Goiter

DR. W. D. HAGGARD, Nashville, Tenn.: From a considerable experience and from observation and reports of the work of those of large experience, I believe that the surgical treatment of this disease affords the most effective and lasting benefit. It has stood the test of time far better than the purely medical management. No matter at what time of life the early symptoms of hyperthyroidism develop, it has been demonstrated that reduction of the blood-supply to the hyperactive gland is a rational and effective method of treatment. The ligation of one or more of the thyroid arteries, under local anesthesia, constitutes one of the most satisfactory methods of handling this disease. Ligation is also indicated at the other extreme of the disease—when the patient is too ill for a radical removal of the hyperplastic lobe. Operation is not to be employed when the patient is in an acute exacerbation, or is rapidly growing worse, but if by rest in bed, with the ice-cap over the heart, belladonna, etc., the patient's condition can be made satisfactory, and if the pulse is below 120, the operation can be undertaken.

DISCUSSION

DR. ARTHUR DEAN BEVAN, Chicago: I am thoroughly convinced of the truth of the theory of Moebius, that goiter is due to an altered and increased secretion of the thyroid, and I have been converted to the work of Kocher that these patients can be improved by the reduction in the amount of the thyroid tissue. In the beginning cases of goiter I believe the proper surgical procedure is ligation of the thyroid arteries. In many of these incipient cases the patients can be cured and the serious effects on the heart prevented by early ligation of the thyroid arteries. This should be done under local anesthesia.

DR. A. J. OCHSNER, Chicago: Every man who has had a large experience in the surgical treatment of exophthalmic goiter can refer more than one-half of the deaths which have occurred in his hands to a slip in surgical judgment. I do not believe I have lost a case in the last three or four years in which I could not definitely attribute it to an error in surgical judgment. A serious error is the one Dr. Haggard has referred to of subjecting these patients to a serious operation at a time when they are at or near the top of a wave of hyperthyroidism. That has carried away a number of these patients. With good surgical judgment, one will avoid these deaths.

DR. DANIEL N. EISENDRATH, Chicago: The relation of the thymus gland to exophthalmic goiter opens a new era in the surgical as well as medical management of the disease. We must consider whether or not we have a persistent thymus present which is a factor in the mortality of the disease. I believe this will explain a considerable number of cases of sudden deaths from exophthalmic goiter which take place before or after operation. I make it a rule at present to have a radiograph made in every case of exophthalmic goiter in which I propose to operate.

DR. J. H. CARSTENS, Detroit: I have patients brought to me under the supposition that they have some pelvic trouble. After examining these patients I have told the physician who brought them that they had exophthalmic goiter. But he would reply, "No; I don't see any goiter; I can't feel any enlarged thyroid gland." When these patients have palpitation of the heart, and have repeated attacks, I tell the physicians if they do not know what is the matter with these women otherwise, to look out for exophthalmic goiter.

DR. GEORGE W. CRILE, Cleveland: The prognosis depends on several things, among them the state of the patient at the time of the operation. It depends on whether or not, after the operation has been completed, the patient is sent back to the environment in which the disease originated. If so, many times there will be a recrudescence of the disease.

Eczema as Seen by the General Practitioner

DR. A. RAVOGLI, Cincinnati: Eczema is curable, when properly treated. It is wrong to starve the patients, forbidding articles of food without scientific ground. On the contrary, the patient has to be well fed in order to increase albumin in the serum to form antibodies to oppose the toxic elements. Only indigestible and badly preserved articles of food have to be avoided. The affected parts have to be cleaned and kept aseptic like any other suppurating wound. Solutions of sodium bicarbonate or sodium biborate, or even a mild soap accomplish the purpose.

For an acute eczema the bathing with a 2 per cent. solution of subacetate of aluminum is very beneficial. After bathing the surface is covered with amylum or talcum powder. For a papular and vesicular eczema the applications of liniment of ichthyol, or of carbonate of zinc are useful. In recurrent vesicular eczema, painting the surface with tincture of iodin for sterilization has given very good results. Rhagades must be touched with silver nitrate, 3 to 5 per cent. solution.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, December 3-6. Sec., Dr. Charles L. Tisdale, 929 Butler Bldg., San Francisco.

DELAWARE: State Society and Homeopathic Examining Boards, Dover and Wilmington, December 10-12. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

KENTUCKY: The Armory, Louisville, December 12. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: Regular, 1211 Cathedral St., Baltimore, December 10. Sec., Dr. J. McPherson Scott, Hagerstown; Homeopathic, St. Luke's Hospital, Baltimore, December 13-14. Sec., Dr. O. N. Duvall, 1326 N. Mount Street.

OHIO: Columbus, December 10-12. Sec., Dr. George H. Matson, State House.

PENNSYLVANIA: Philadelphia, December 3-5. Sec., Nathan C. Schaeffer, Harrisburg.

VIRGINIA: Richmond, December 17-20. Sec., Dr. Herbert Old, Norfolk.

ADVANCED REQUIREMENTS IN PENNSYLVANIA

Dr. J. M. Baldy, president of the Bureau of Medical Education and Licensure of Pennsylvania, reports that at a meeting held at Harrisburg, Nov. 1, 1912, it was voted that after Jan. 1, 1914, the bureau would require for admission to medical colleges, in addition to a standard four-year high school course or its equivalent, not less than one year of college credits in chemistry, biology, physics and a modern language other than English, or the equivalent thereof as determined by the Bureau of Professional Education; and for examination for license to practice medicine in the state of Pennsylvania, a year of service as intern in an approved hospital, or a year of approved postgraduate instruction, and that the necessary amendments to the medical practice act be secured at the coming session of the legislature. If this legislation is secured Pennsylvania will be the first state to require that every applicant for a license to practice medicine within its borders must have held an internship in a hospital. Pennsylvania, therefore, has the opportunity to be the first state to demand this most desirable qualification for licensure.

PROFESSOR HIS ON MEDICAL EDUCATION *

As in the case of most of my traveling companions for the first time in this country, it may appear premature for me to express an opinion about American institutions; but the education of the physician, graduate as well as postgraduate, is a subject which occupies and must continue to occupy all enlightened nations while our art and science progress and until we are able to complete a system of the subject and the method of teaching it. Every country tries in its own way to do justice to this task, but that the ideal thus far has nowhere been reached is shown by the fact that in France and in England commissions attempt to improve medical education, and that in Germany, in spite of rather recent improvements, we hear continually of propositions for further changes.

There was a time when medicine was taught *ex cathedra*. Teaching was purely dogmatic, consisted exclusively in the reading and explanation of the classics, and the only problem was whether the Arabs or Galen should be followed. As late as 1796 medicine in Leipsic was taught *duce Gaubio*, that is, based on the pedantic and dry text-book of Gaubius. One who wished to learn observation of the sick had to go to Holland or Edinburgh, where the method of a Sylvius, a Boerhaave, a van Swieten had taken root. At that time a student could pass his examinations with honors without ever having seen and studied a patient or assisted at an autopsy. It is true that the teaching at the sick-bed became general during the earlier part of the nineteenth century, but this progress was retarded, at least in Germany, by the unfortunate epoch of natural philosophy. The poet Eichendorff missed his examinations because he left unanswered the question about the crystallization of the solar ether! At Vienna, at Halle with Krukenberg, at Berlin with Reil, one certainly had the opportunity to learn solid practical medicine, but the need of a demonstrative, objective education with practical occupation of the students asserted itself in general only after medicine, until then the daughter of philology, had become a sister of the natural sciences. Even then small and narrow conditions often persisted, especially in regard to the teaching equipment. My father, who taught anatomy and physiology in Basel, had at his disposal two rooms, half of a corridor and a third of a *Diener!*

New tasks arose for the clinic after physiology, under the leadership of John and William Hunter, Johannes Müller, Magendie, Claude Bernard and Virchow, had built and broadened the bridge to practical medicine. Then laboratory work became a necessity and the clinician an experimenting scientist. Here also the path was not a smooth one. The old practitioners scoffed at the "frog-and-rabbit clinicians." The brilliant development, however, of all clinical branches has shown that only by a combination of theory and practice, of research and its application, can errors and one-sidedness be avoided. Theory opens new fields for practice and practice fecundates theory by putting new questions and controlling conclusions by experience. These divisions have necessarily increased the demands made on the clinician. He has to follow anatomy, physiology and pathology, he has to keep in touch with physics and chemistry, he must be a good teacher as well as a good physician and something of an architect and administrator. Experience has shown that he can master all this fairly well, if he has learned to separate the important from the unimportant.

The clinic has thus become an organization of multiple branches which cannot be overseen by the one in charge unless he has at his side capable young men as helpers. These can be trained for the task provided that the certainty can be held out to them that honest and successful work will assure their future. Their advancement will depend, as far as this is possible, entirely on their accomplishments, regardless of foreign influences, personal, political or otherwise, which in the end always prove harmful. While the young scientist is working and waiting he should receive sufficient remuneration to enable him to devote all his energies to the service of the clinic. Such a condition has been approximately reached in the internal, surgical and specialistic clinics of Germany, Austria and Switzerland. That the ideal is not yet reached is shown by the many complaints and demands made by our privat-docents.

A gradual evolution during one century was necessary to bring about the present condition. America is a young country; what a few years ago was wilderness is to-day a land of culture. If there are here and there primitive conditions, they are merely transitory and their further development is beyond doubt. The only question remaining open is as to the most rapid and certain method of procedure. The solution is in sight when once it is generally accepted that only through its own resources can science assimilate food and force, that anything outside of scientific necessity acts as an indigestible foreign body, hindering or even arresting scientific development. To bring this conviction to general appreciation and acceptance, to impregnate it with common sense, is the surest way to rapid and profitable progress. America has often drawn inspiration from Europe, but has also given inspiration. It is here that two kinds of institutions arose which to-day are considered indispensable and equivalent complements to the medical clinic: the scheme of postgraduate education and the research institute. To become acquainted with these two institutions and to study their details is the most interesting task for the European physician visiting the United States. Here we want to see and to learn. To improve ourselves in the mutual exchange of ideas, to strive in friendly competition for our common high ideals—this is our aim. Our trip has been organized to serve this end and I cannot conclude better than by thanking you again for having met us with open arms.

* From an address delivered at the reception of the German Medical Society, New York, Sept. 18, 1912. Professor Wilhelm His, director of the First Medical University Clinic, Berlin, was touring the United States with a group of other European physicians, as already detailed in THE JOURNAL.

California August Report

Dr. Charles L. Tisdale, secretary of the California State Board of Medical Examiners, reports the written examination held at San Francisco, Aug. 6-9, 1912. The number of subjects examined in was 10; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 199, of whom 164 passed including 24 osteopaths and 35 failed including 11 osteopaths. Ten other candidates were licensed on the basis of honorable discharge from United States services. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles (1908) 81.9; (1912) 75, 75.1, 77.7, 78.5, 78.7, 79.4, 79.9, 80.7, 80.7, 81.3, 81.4, 82.4, 84.2, 85, 86, 87, 88.3.		
Cooper Medical College (1912) 76.1, 77.9, 78.2, 79, 80.2, 80.5, 81.3, 82.7, 83.4, 83.4, 83.6, 84, 84.5, 84.8, 84.9, 84.9, 85.7, 85.8, 86.5, 86.5, 86.8, 87.4, 88.8, 89, 89.7, 90.3.		
University of California, San Francisco (1912) 77.5, 83.9, 86.1, 86.7, 87.3, 87.7, 88.7, 89, 89.6, 89.7, 92.3.		
University of California, Los Angeles (1911) 79.4, 83.5; (1912) 84.3, 84.7, 85, 86.4, 86.8, 89, 89.3, 91.8, 92.1, 93.4, 93.7.		
Hahnemann Medical College of the Pacific...(1912) 81.1, 81.1, 86		
College of Physicians and Surgeons, San Francisco.	(1911)	78.5
Oakland College of Medicine and Surgery	(1912)	80.7
Denver and Gross College of Medicine	(1908)	83.7
University of Colorado	(1911)	84.4
Denver Homeopathic College	(1906)	78.4
Howard University, Washington, D. C	(1904)	75
Hahnemann Medical College and Hospital, Chicago.	(1896)	*85.3
American Medical Missionary College	(1902)	*80.8
Northwestern Univ. Med. School.	(1911) 79.3, 82.8; (1912)	76.1
College of Phys. and Surg., Chicago..(1902) *92.2; (1903)		88
Rush Medical College (1903) 87.1; (1907) 85.1; (1911) 85.2; (1912) 89.1.		
Bennett Medical College	(1907)	75
Chicago College of Medicine and Surgery	(1909)	83.4
Kentucky School of Medicine	(1904)	75.3
Louisville Medical College	(1888)	*84.7
Tulane University of Louisiana	(1893)	*88.2
Johns Hopkins Univ. Medical School..(1907) 83.5;	(1912)	86.6
Harvard Medical School.(1909) 85.2; (1910) 92.4;	(1912)	77.9
Tufts College Medical School	(1898)	*83.5
University of Michigan, Department of Medicine and Surgery	(1906) 83.2; (1912)	89.8
University of Minnesota, College of Medicine and Surgery...(1897) *85.1; (1906) 84; (1912) 86.9.		
Washington University, St. Louis	(1905) 78.3; (1909)	80.7; (1910) 80.9.
University Medical College, Kansas City	(1900)	*90.1
St. Louis College of Physicians and Surgeons	(1897)	*85.8
Marion-Sims Beaumont Medical College	(1906)	85
St. Louis University	(1906) 80.1; (1912)	83.7, 85.3
University of Nebraska, College of Medicine	(1887)	91.1
Creighton Medical College	(1896)	*80.2
Cornell University Medical College	(1910)	83.6
University and Bellevue Hospital Medical College..	(1911)	77.5
Columbia University, College of P. and S.	(1911)	84.4, 87.3
Syracuse University	(1905)	81.6
Medical College of Ohio	(1891) *88.7; (1905)	91
Starling Medical College	(1903)	75.6
University of Wooster, Cleveland	(1880) *91.6; (1895)	*85.9
University of Oregon	(1911)	87.2
Jefferson Medical College	(1906)	83.6
Woman's Medical College of Pennsylvania	(1905)	83.3
Western Pennsylvania Medical College	(1903)	75.2
University of Pennsylvania..(1879) *90.9; (1887) *95.7; (1891) *85; (1912) 89.6.		
Vanderbilt University	(1898)	*83.1
University of Virginia	(1901)	*86.4
M.R.C.S. Eng. (1889); L.R.C., Ire.†	(1885)	*93.6
University of Durham, England	(1911)	91.3
University of Vienna, Austria	(1910)	86.1
University of Edinburgh, Scotland	(1905) 93.7; (1910)	83.4

FAILED		
College of Physicians and Surgeons, San Francisco (1911) 59.9; (1912) 63.4, 72.4.		
Cooper Medical College	(1907) 69.5; (1912)	66.1, 70.6
Hahnemann Medical College of the Pacific	(1912)	72.8
Oakland College of Medicine and Surgery	(1912)	69.4
College of Physicians and Surgeons, Los Angeles	(1912)	69.2, 70.5
Northwestern University Medical School	(1912)	72.8
College of Physicians and Surgeons, Chicago	(1901)	72.9
Kentucky School of Medicine	(1906)	67.7
University of Louisville	(1905)	71.3
College of Physicians and Surgeons, Baltimore	(1882)	84.1
Baltimore University	(1899)	60.5
Harvard Medical School	(1912)	72.9
Barnes Medical College	(1893)	54.9
Lincoln Medical College	(1906)	53.8
Laura Memorial Woman's Medical College	(1903)	53.9
Medical College of Ohio	(1895)	52.7
Cleveland Medical College, Homeopathic	(1892)	69.7
Miami Medical College	(1873)	82.4
Royal University of Naples, Italy	(1903)	56.3

* Includes percentage credit for years of practice.
† These are licensing boards and not medical schools.

Massachusetts July and September Reports

Dr. Edwin B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, reports the written, practical and oral examinations held at the State House, Boston, July 9-11 and Sept. 10-12, 1912. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. At the examination held in July, the total number of candidates examined was 119, of whom 93 passed including 4 non-graduates and 6 osteopaths, and 25 failed including 5 non-graduates and 7 osteopaths. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Medical School of Maine	(1912)	78
Baltimore Medical College	(1911)	78.3
College of P. and S., Baltimore	(1902) 75; (1912)	82.1
Johns Hopkins Univ. Med. School	(1912) 75.1, 80.2, 82.6,	86.5
University of Maryland	(1911) 79.2; (1912)	75
College of Physicians and Surgeons, Boston	(1912)	75, 78.2
Boston University (1911) 79.7; (1912) 75, 75, 75.7, 75.8, 76, 76.9, 77, 77.2, 78, 78.2, 79, 81.2, 81.8, 82.		
Tufts College Medical School (1908) 75, 75.4; (1911) 75.5; (1912) 75, 75, 75, 75, 75.7, 75.8, 75.8, 75.9, 76.7, 76.9, 77, 77.2, 77.8, 78.2, 78.5, 78.7, 79.2, 79.7, 79.7, 79.8, 80.1, 80.3, 80.6, 80.7, 81, 82.5, 83.5, 83.7, 84.5, 86.6.		
Harvard Medical School (1909) 75, 80.6; (1912) 75.7, 76.9, 78.2, 79.5, 80.3, 81, 81.7, 85.9.		
Jefferson Medical College	(1908) 75.1; (1912)	79.8, 80.4
University of Pennsylvania..(1893) 90; (1910) 78.4; (1011)		76.8
Medico-Chirurgical College, Philadelphia	(1911)	81.5
Medical College of the State of South Carolina	(1912)	77
University of Vermont	(1911)	75, 76
University of Toronto, Ontario	(1908)	77.8
McGill University, Montreal	(1909)	80
University of Rome, Italy	(1894)	75
Non-graduates	75, 75, 75.7,	78.4

FAILED		
Atlanta School of Medicine	(1912)	60
Maryland Medical College	(1910) 66.9; (1912)	68.2, 70.3
College of Physicians and Surgeons, Boston (1907) 61.3; (1910) 65.7; (1912) 66.		
Tufts College Medical School	(1912)	70.5, 71.4
Boston University	(1912)	70.5
Harvard Medical School	(1912)	62.4
University of Vermont	(1911)	72.3
University of Naples, Italy	(1910)	70.6
Non-graduates	67.2, 69.7, 71.6, 72.2,	72.9

At the examination held in September the total number of candidates examined was 54 of whom 29 passed including 1 non-graduate and 2 osteopaths and 23 failed including 5 non-graduates and 7 osteopaths. Two candidates did not complete the examination. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Bennett Medical College	(1912)	75.2
Maryland Medical College	(1910) 75; (1911) 75.7; (1912)	75
Tufts College Medical School (1911) 75.7, 81; (1912) 75, 78.9, 80, 81.7.		
Boston University	(1912)	82.2
Harvard Medical School (1911) 81.7; (1912) 79.3, 81.9, 83.4, 83.7, 85, 85.4.		
Dartmouth Medical School	(1912)	78.7
Long Island College Hospital	(1912)	77.7
Columbia University, College of P. & S.	(1911)	81.7
New York Homeopathic Med. Coll. and Hospital	(1912)	76.7
Jefferson Medical College	(1878)	85
University of Vermont	(1908) 90; (1911)	77.6
University of Naples, Italy	(1910)	76
Non-graduate		75.6

FAILED		
Atlanta School of Medicine	(1912)	66.9
National Medical University, Chicago	(1909)	58.7
College of Physicians and Surgeons, Keokuk	(1890)	49
Maryland Medical College	(1910)	71
College of Physicians and Surgeons, Baltimore	(1911)	71.7
College of P. and S., Boston	(1907) 65; (1912)	68.9
Harvard Medical School	(1912)	67.9
Laval University, Quebec	(1911) 68.1, 71.1,	72
Non-graduates	58.9, 68.4, 70.2, 70.2,	71.5

Book Notices

A TEXT-BOOK OF PATHOLOGY. For Students of Medicine. By J. George Adami, M.A., M.D., F.R.S., Strathcona Professor of Pathology, McGill University, and John McCrae, M.D., M.R.C.P., Lecturer in Pathology and Clinical Medicine, McGill University. Cloth. Price, $5 net. Pp. 759, with 304 illustrations. Philadelphia: Lea & Febiger, 1912.

The appearance of a single-volume text-book on pathology almost on the heels of the second edition of the larger treatise on pathology by the same authors, would at once suggest that the smaller work was a mere condensation of the larger one; but the authors distinctly assert that this is not the case. The single volume is said to be a response to repeated requests by the publishers, seconded by appeals from colleagues in not a few schools, for something which would embody the main features of the former work without its bulk.

While the general plan of the work is the same as that of the larger treatise in that it is divided into two parts, namely, "General Pathology" and "Special and Systemic Pathology"; and while the ideas expressed in the two works must necessarily agree, being by the same authors, yet it will readily be seen that the one is not simply a condensation of the other but that much of the matter has been entirely rewritten, with the elimination at times of elaborations on the ideas, which are themselves retained.

In a single volume of a little over 700 pages one could not expect to find special pathology covered very extensively, yet there is sufficient to give to the student a good foundation on which to build. Many of the illustrations are entirely new and the work presents an attractive appearance.

THE ANATOMY OF THE HUMAN EYE, AS ILLUSTRATED BY ENLARGED STEREOSCOPIC PHOTOGRAPHS. By Arthur Thomson, M.A., M.B., F.R.C.S., Professor of Human Anatomy in the University of Oxford. Paper. Price, 2£ 2 shillings net. Sixty-Seven Stereoscopic Photographs in a box, with Letter-press and Key-Plates. London: Henry Frowde, 1912.

The explanatory text and stereoscopic pictures that constitute this work were used by Mr. Thomson to illustrate a course of lectures on the gross anatomy of the eye delivered to candidates for the diploma in ophthalmology at Oxford. The book is a notable and extremely useful contribution for the use of teachers of diseases of the eye. The idea of using the stereoscope for the purpose of demonstrating the normal and pathologic anatomy of the ocular structures is not new but it has remained for Thomson to give us a large number of pictures that faithfully depict these conditions. As Thomson points out, the specimens from which the photographs were taken were most of them removed within four hours after death. They were hardened in a formaldehyd solution, frozen, and sections prepared. Further dissections, when necessary, were then performed, and the preparations photographed under spirit. The photographs have been mounted on cards of standard size, so that they will fit any of the numerous stereoscopes already on the market.

The chapters that accompany the photographs constitute a *vade mecum* that affords the student all the information he is likely to require and form an admirable introduction to larger and more elaborate treatises on the subject. The press work is excellent.

THE ACCESSORY SINUSES OF THE NOSE IN CHILDREN. By Prof. Dr. A. Onodi, Director of the University Clinic for Diseases of the Nose and Throat in Budapest. With a Preface by Prof. Dr. W. Waldeyer, Director of the Anatomical Institute of the University of Berlin. Translated by Carl Prauanitz, M.D., M.R.C.S., L.R.C.P., Head of the Hydrophobia Department of the Hygienic Institute University of Breslau. Cloth. Price, $7. One Hundred and Two Plates. New York: William Wood & Co., 1911.

The preface of this book states that the object of the work is the study of the development of the accessory sinuses from their first appearance until after the beginning of puberty. Sections were cut in the three principal planes of the body and the accurate measurements of the air spaces are given. The book is illustrated with 102 plates, eighty-six of which represent the sections, and the remainder radiograms of the accessory sinuses. Explanations of the plates are written in German, French and English. The book will serve to direct closer attention to the accessory cavities in children and will undoubtedly prove a great stimulus in directing further work along this line.

GENERAL SURGERY. Edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in the Northwestern University. Cloth. Price, $2. Pp. 616, with Illustrations. Practical Medicine Series. Chicago: The Year Book Publishers, 180 N. Dearborn Street, 1912.

This handy volume of 600 pages forms the second number of the well-known Practical Medicine Series for the current year. A brief introduction calls attention to the topics of chief importance treated in the succeeding pages. In this the editor remarks that surgical technic is tending to a uniform standard so that operative methods are practically the same the world over. The space devoted to technic in the present work adds greatly to its value to the general practitioner, for whom the book is especially intended. This practical value of the book is much enhanced by the numerous and excellent illustrations.

Medicolegal

Corporation Liable for Physician's Bill

(Taylor vs. C. M. Roberston Co. (Conn.), 83 Atl. R. 534)

The Supreme Court of Errors of Connecticut finds no error in a judgment rendered for the plaintiff for services as a physician in attending an injured employee of the defendant. The court says that the employee, a boy about 17 years of age, was seriously injured one night by being drawn under a large belt in a mill operated by the defendant for the manufacture of paper board. A fellow workman summoned the plaintiff, who cared for the boy, attending him professionally for something like two months. Within a few days after the accident, while the plaintiff was attending the boy, a bookkeeper in the defendant's employ at the mill came to obtain information in regard to the extent of the boy's injuries, and during the interview told the plaintiff that the defendant would be responsible for the payment of his services. The president of the defendant also knew of the injuries to the boy, and that the plaintiff was attending him professionally, and on different occasions during the period of his attendance talked with the plaintiff about the boy's condition and prospects of recovery. After the services had been rendered, the plaintiff rendered to the defendant his bill therefor, which was sent by mail in a letter addressed to the defendant. In reply the plaintiff in a few days received a letter on the defendant's letter-head, reading: "It would oblige us very much if you would render a detailed bill of medical attendance to Earl McDiarmid. If you can modify this bill in any way, it would be much appreciated, as it looks now as though we would be forced to stand the full charge ourselves. Thanking you in advance for the favor, we remain, yours truly, The C. M. Robertson Co.—J. E. Church." Church was the bookkeeper before mentioned. The defendant's board of directors had never taken action empowering any of its agents, employees, or officers to employ the plaintiff to attend McDiarmid, or to ratify such employment, or to pay for services so rendered. The trial court found that Church represented to the plaintiff that the defendant would be responsible for his services; that this representation was known to the officers of the defendant; that the bill, mailed as stated was received by the officer in charge of the company; that the reply letter was written by Church by direction and authority of such officer, and that it appeared from the evidence that the plaintiff rendered the services in question under circumstances which justified him in believing that the defendant would pay for the same, and that the officers of the defendant had knowledge of these circumstances. The facts stated having been found, the judgment for the plaintiff was properly rendered. The foundation of the defendant's liability was not to be found in any express promise, or direct assumption of obligation. What the court made the basis of its judgment was certain knowledge and conduct on the part of the defendant leading to the ultimate conclusion that it had assumed as its own the assurance of its responsibility for the care of its servant given by its bookkeeper to the plaintiff, and on the faith of which he acted. The testimony disclosing Church's conversation with the plaintiff, the interviews between the plaintiff and the defendant's president, and the contents of the letter hereinbefore quoted were properly received. No part of it, of course, was competent to show an express promise by the defendant to pay for the plaintiff's services, or an obligation to do so directly assumed by ratification or otherwise, since no authority therefor was shown in any person who undertook to speak on the subject. But it furnished a basis for material inferences.

County Court Without Power to Order Registration as of Earlier Date

(In re Somme (N. Y.), 136 N. Y. Supp. 57)

A Special Term of the Supreme Court of New York, Queens County, holds that the county court has no jurisdiction and no authority to make an order directing the county clerk to

enter the name of a physician in the "Register of Physicians and Surgeons," say on July 24, 1908, as of December 1, 1899, after he had, on the latter date, omitted to register his diploma in the office of such clerk, as the law required; nor has the county judge any authority or power, statutory or otherwise, so to do, and such an attempted registration of an applicant as a doctor of medicine is a nullity, without any vitality or effect, which on proper application will be vacated and canceled.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

November, IV, No. 5, pp. 265-332

1 *Influence of High Protein Feeding on General Metabolism, on Intestinal Flora and on Body Temperature of Infants: I. General Considerations. L. E. Holt and P. A. Levene, New York.
2 *Idem: II. Clinical Observations A. Brown, New York.
3 *Idem: III. Bacteriologic Observations. M. Wollstein, New York.
4 Idem: IV. Observations on Metabolism. A. M. Courtney and J. A. Moore, New York.
5 Epidemic of Sore Throat with Involvement of Cervical Lymph-Nodes. J. Ruhräh, Baltimore.
6 *Effects of Cold Air on Blood-Pressures of Children and Young Adults in Various Stages of Tuberculosis. B. R. Hoobler, New York.
7 Paroxysmal Hemoglobinuria. L. C. Ager, Brooklyn.
8 *Mode of Infection in Epidemic Cerebrospinal Meningitis. D. Bovaird, New York.

1. Influence of High Protein Feeding on General Metabolism, Etc.—It is held by Holt and Levene that alimentary fever may, under certain conditions, occur in infants after administration of casein of cow's milk and perhaps of other proteins. The rise of the body temperature was observed by them only when the food mixture was made up so as to contain about 6 per cent. of protein (chiefly casein) and a minimal quantity, only about 150 to 175 c.c. of milk daily. The rise of body temperature was invariably accompanied by a retention of chlorids, which, however, usually preceded the febrile attack by two or three days. After the first rise of temperature the fever persisted so long as the diet was continued, but in every instance promptly disappeared as soon as the food was changed. The fever is apparently due to the direct action of the absorbed protein, since the bacterial conditions of the intestines noted during the period of the "synthetic" food were not different from those noted during the preceding period.

From the observations reported by Holt and Levene it would appear that the changes in the food influenced the chemistry of the excreta more than they did the bacteriology. For while the chemical changes resulting from the food variations differed considerably in the individual cases, the bacteriology changed along the same general lines in all. In view of this fact and of the slow changes in the intestinal flora noted in these observations, such changes would seem to have but a limited application for therapeutic purposes, though a very definite one when the food changes can be made sufficiently great. It seems clear from these observations that one may use considerably higher percentages of protein in milk formulas than the 3.5 per cent. of Finkelstein's formula. This is a point which may be of much practical importance in conditions in which there is marked intolerance both of fats and carbohydrates. Such high proteins as 4.5 per cent. or over should only be used for limited periods, and never given at all except with a suitable proportion of whey. This report emphasizes the physiologic importance of whey in the nutrition of infants and other young animals. While laying stress on the dangers of whey, especially from its sugar content, in many forms of intestinal disturbance, Finkelstein and Meyer have also appreciated the dangers to nutrition which may follow reduction of the salts. Recently Osborne and Mendel also have found that the mineral salts in the proportion present in whey were absolutely essential for the growth of animals, and that in the absence of salts, though maintenance of life was possible, growth could not be induced. As yet it is not possible to formulate any definite opinion as to the nature of the whey components which inhibit that action of casein, which, in the absence of whey, causes the rise of body temperature. The present observations call special attention to the work of V. C. Vaughan and his collaborators, who have repeatedly reported the production of fever by the subcutaneous injection of various proteins. Whether or not the fever induced clinically in our cases and experimentally by Vaughan is occasioned by the same mechanism, remains to be established.

2. Idem.—In every one of the five observations made by Brown on three infants, an attack of fever followed the administration of a "synthetic" food, although in all the temperature had been previously normal for a considerable period. Three times this developed on the fourth day, once on the fifth and once on the sixth day. In four observations the patients had previously taken as high, or nearly as high, a percentage of protein in food prepared differently for much longer periods (in one case for sixteen days) without the development of fever. In every instance the fever developed abruptly without other warning than anorexia and some restlessness which usually preceded the rise of temperature for about twelve hours. The fever persisted so long as the diet was continued, but ceased almost at once when the food was changed to a simple milk dilution. With the fall in temperature all of the general symptoms speedily disappeared.

The highest temperature noted was 105.4 F. In the patient showing the least reaction it rose to 102.5 F. The average rise was to 104 F. Marked nervous symptoms usually accompanied the fever; constant rolling of the head, extreme restlessness, pallor, rapid respiration, considerable prostration, and in three observations marked leukocytosis. In one case the white cell count reached 27,000. Digestive symptoms, except anorexia, were conspicuously absent. Initial vomiting was noted but once; the bowels were usually somewhat constipated but not otherwise abnormal; a moderate abdominal distention was noted but once; neither pain nor tenderness was evident in any case. The urine showed several times an increased indican reaction, but this was not constant or persistent. Pallor, rapid respiration and prostration were marked in all but one case. In every instance there was rapid loss of weight, which was due partly to the refusal of food and partly to catharsis. This loss was soon repaired in nearly every case. In none of the observations did the symptoms resemble an ordinary attack of acute indigestion.

3. Idem.—Wollstein found that the varieties of bacteria identified as present in the rectal contents of the five children before and during the period of study included the following: *Albococcus*, *Micrococcus ovalis* or *Enterococcus*, a streptococcus proteolyzing milk, a streptococcus not proteolyzing milk, *B. coli communis; B. coli communior; B. lactis aerogenes; B. acidophilus; B. bifidus; B. bulgaricus; B. fluorescens*, liquefying gelatin. *B. dysenteriae* (Shiga) was found in one case. During the periods of high carbohydrate in the food the cocci, colon bacilli, acidophilus and bifidus bacilli were most numerous; sometimes *B. aerogenes capsulatus* appeared. During the periods of high protein content in the food, *B. mesentericus* gained the ascendancy, *B. aerogenes capsulatus* sometimes persisted, and the colon bacilli were increased in numbers. But the acidophilus and bifidus bacilli did not entirely disappear, probably because the change in the food was not complete or prolonged enough. Bacteria introduced with the food (*B. fluorescens, B. bulgaricus, B. subtilis, B. megatherium*) were found in the feces within a period varying from twenty-four to seventy-two hours. The transition in the flora from one period to another was always gradual, never abrupt, recognizable changes requiring forty-eight to seventy-two hours to develop. The return to the bacterial picture present at the beginning of the observation, which may be assumed to be the normal for that particular infant, was accomplished in from seven to ten days after the end of the study and subsequent catharsis. As regards the children studied a second time, neither one gave any evidence of a more rapid reaction during the second observation than he had shown during the first.

6. **Effects of Cold Air on Blood-Pressures of Children.**—Hoobler found that the blood-pressure in children having tuberculosis is persistently low, as has been found to be the case in adults. When a patient is transferred to the open air there is a gradual increase of blood-pressure within one or two hours. If the patient is kept constantly in the open air the pressure is raised to well within the normal limits and sustained at that point as long as the patient remains in the open air. The more advanced the case, the lower the pressure indoors, and the higher the rise when put in the open air. After several days in the open air the blood-pressure does not fall as much when placed in ward as it did previous to outdoor treatment.

8. **Mode of Infection in Epidemic Cerebrospinal Meningitis.**—Bovaird believes that the evidence at our command at present strongly suggests that the primary infection in epidemic cerebrospinal meningitis is respiratory, in most cases nasopharyngeal, and that the meningeal infection is developed through the blood.

American Journal of Obstetrics and Diseases of Women and Children, New York

October, LXVI, No. 418, pp. 509-708

9 Physiology of Ductless Glands in Their Relations to Obstetrics. C. E. DeM. Sajous, Philadelphia.
10 Therapeutic Application of Ductless Glands. H. A. Hare, Philadelphia.
11 Use of Pituitary Extract in Obstetrics. C. B. Reynolds, Philadelphia.
12 *Present Status of Corpus Luteum Organotherapy. W. Krusen, Philadelphia
13 *Study of Certain Aspects of Comparative Anatomy Illuminating Architecture and Physiology of Human Pelvis. W. H. Allport, Chicago.
14 Case of Ovarian Fibromyoma Undergoing Sarcomatous Degeneration. H. J. Hartz, Philadelphia.
15 *Use of Continuous Fixed Laparotomy Sponge. W. F. B. Wakefield, San Francisco.
16 Torsion of Tubal Enlargements, with Special Reference to Pyosalpinx. B. M. Anspach, Philadelphia.
17 *Two Hundred and Twelve Cases of Cancer of Uterus, with Special Reference to Early Diagnosis. G. Kamperman, Ann Arbor, Mich.
18 Use of Adhesive Plaster in Cure of Talipes Equinovarus of Infants at Birth. A. R. Allen, Carlisle, Pa.
19 Diagnosis of Bone Diseases in Children. G. F. Little, Brooklyn.

12. **Corpus Luteum Organotherapy.**—After a careful study of the literature and the observation of his own patients, Krusen believes that the following conclusions formulated by Morley are justifiable: 1. The ovary possesses an internal secretion. 2. This internal secretion is produced by the corpus luteum. 3. In so-called ovarian insufficiency, relief may be obtained with an extract of the corpus luteum. 4. No untoward symptoms result from its use in conditions where it is indicated, even if no relief is obtained. 5. The extract should be given a fair trial before it is discontinued. 6. The extract used should be one that has been carefully prepared. 7. All glands that possess an internal secretion are more or less intimately connected.

13. **Comparative Anatomy of Human Pelvis.**—From a careful study of the pelves of various animals and the human, Allport believes it is plain that the human pelvic arches serve different purposes; the primary function of the dorsal arch is resistance to pressure, that of the ventral arch resistance to tension. Since force acting as traumatism is usually manifested in terms of pressure rather than of tension, this also makes it clear why in 90 per cent. of pelvic accidents the pubic arch, whose greatest strength lies in the tensile resistance, is the sufferer. When compared with the pelves of lower mammals the human posterior arch shows a remarkable development both in function and architecture. The anterior arch shows an equally distinct retrogression, not only in function, but as an anatomic corollary, in the quantity and strength of the material entering into its construction; mass and density have been sacrificed to tensile strength.

Allport says his study leads inevitably to the conclusion that function dictates to anatomy. Phylogenetically the tendinous belly wall of the oviparous bird becomes the massive ischiopubic uterine support of the viviparous mammalian quadruped; this in turn, in the one completely erect primate, shrinks again into secondary importance as the pubic structure becomes merely an ossified chord or "tension member" inserted to restrain the lateral thrust of the sacro-iliac arch. The thick and shapeless haunch bone of the *Ungulates* becomes the light and gracefully expanded iliac wing of man. The thin elongated sacral wedge of the quadruped becomes the broad basal support of the human spinal column, and hangs in turn as the inverted keystone of an arch perpendicularly on the heavily buttressed ilium and acetabulum. The sharp and projecting ischium, to which attach the rump muscles of lower mammals, is shortened and inverted to close the human pelvis, and provides the primate when seated with secondary points of support for the sacroiliac arch.

15. **Use of Continuous Fixed Laparotomy Sponge.**—Wakefield uses long folds of gauze of desirable size which, for convenience and safety, are packed in bags. One end is stitched to the bottom of the bag; the other end is left free at the top. We thus have a continuous sponge which is pulled out little by little as required. Two sizes meet all requirements. He uses a laparotomy sheet containing the border strip of gauze which is used for packing back the intestines or walling off local infective areas. In each side pocket fasten one of the narrower strips which is used by the operator and his assistant for keeping the field clear of blood or doing any work a sponge may be called on to do. The pockets in the laparotomy sheet are a good deal wider than the sponge bag and the used-up part of the sponge is tucked away in the pocket of the sheet, leaving a clean portion of the strip always under the operator's fingers ready for use. Should an abscess be opened or any infective fluid be spilled in the abdomen or pelvis, one of the sponges is used to wipe it clear and then discarded, another pocket with contained sponge being pinned or clamped to the sheet over the original pocket, thus covering up the whole infected area. When troublesome oozing occurs, which demands the use of a temporary hot sponge pack, a sponge bag is pinned to the laparotomy sheet below the incision, and as much as is required is pulled out, wrung out of hot salt solution, and packed in the pelvis.

17. **Cancer of Uterus.**—As a basis for this paper, Kampermann made a study of 212 cases of cancer of the uterus. He found that cancer holds fifth place as a cause of death in Michigan. During the last five years the death-rate due to cancer in Michigan has increased 15 per cent. Among gynecologic patients one in every twenty-five has cancer of the uterus. In five-sixths of all cases of cancer of the uterus the disease is primary in the cervix, and in one-sixth of the cases it is primary in the fundus. The age limit of carcinoma of the uterus is wide, from 28 to 75 years. The average age is 48 years. Carcinoma of the cervix occurs most frequently between 35 and 55 years of age; carcinoma of the fundus between 45 and 65 years of age. Carcinoma of the fundus develops over a longer range of years than carcinoma of the cervix. Patients with cancer of the cervix present a history of child-bearing in 92 per cent. of all cases. Among patients with cancer of the fundus the percentage is 72. Cancer of the uterus, although more common in parous women, may develop in nulliparae. Heredity has very little part in the development of uterine carcinoma.

Carcinoma of the uterus can be cured by operation, says Kampermann. In order to obtain a cure, however, the diagnosis must be made early. The early diagnosis of carcinoma of the uterus depends on giving close attention to the earliest symptoms. An increase in bleeding in a woman approaching the menopause demands a careful investigation and a microscopic examination of tissue from the cervix and fundus. The first symptom of carcinoma of the uterus in 73 per cent. of cases is an increased menstrual or an irregular intermenstrual discharge of blood. Watery and foul discharge and pain are symptoms occurring at a later stage of the disease. Carcinoma of the uterus occurs in many healthy and robust-looking women. Cachexia occurs only in advanced stages of the disease. The radical abdominal operation offers the only absolute cure for carcinoma of the cervix. Carcinoma of the fundus can be cured by a less radical operation. In inoperable cases temporary relief can usually be secured by a palliative operation. Most of the patients afflicted with this disease die either from some terminal infection or from uremia. To obtain earlier diagnoses

the profession as well as the laity must be educated. All women must be taught that the menopause means lessened flowing, and that any increase in flowing at this time may signify disease. An organized campaign of education is necessary if more patients are to be saved from cancer in all its forms.

American Journal of Urology, New York

October, VIII, No. 10, pp. 511-566

20 Diagnosis of Diseases of Urinary Tract by Combined Use of Cystoscope and Roentgen Ray. E. M. Stanton, Schenectady, N. Y.
21 Surgical Treatment of Renal and Ureteral Calculi, with Report of Eighty-Two Cases. D. P. Kouznetzky.
22 *Case of Unrelieved Unexplainable Vesical Tenesmus. F. R. Hagner, Washington, D. C.
23 Salvarsan. A. Ravogli, Cincinnati.
24 Sexual Impotency. V. Blum.

22. **Unrelieved Unexplainable Vesical Tenesmus.**—Hagner's patient, a man, aged 67, complained of frequent urination and great tenesmus. The patient lost a leg during the Civil War; otherwise he had been normal. For five years, however, he had had symptoms of prostatic obstruction. On September 28, he had complete retention, relieved for a short time by catheterization, the tenesmus returning after a half hour. The tenesmus and urinary frequency continued, gradually increasing up to October 4. When Hagner first catheterized the patient he obtained 6 ounces of residual urine. The urine contained colon bacilli and a moderate amount of pus. The catheterization relieved his bladder spasm for about twenty minutes, then the tenesmus returned and a catheter reintroduced obtained only a small amount of urine, without relief of pain. Usually when the paroxysm of pain reached its crisis he would insert his finger into his anus and make forcible pressure on the soft parts on the tuberosity; this he declared invariably afforded him some measure of relief. His bladder capacity was seven ounces. The cystoscopic examination, which was not very painful, revealed a moderately enlarged intravesical prostate with regular outline; on rectal examination a fairly firm, moderate size prostate was noted. A perineal section was performed and a drainage tube inserted. As soon as the patient recovered from the anesthetic the tenesmus returned, being as severe as before the operation. He was given full doses of morphin to relieve the tenesmus, which had very little effect. Believing that the presence of the perineal tube in the bladder might be a factor in causing a continuance of the tenesmus, it was removed, replacing it with a soft rubber catheter. His relief was of only thirty minutes' duration, tenesmus then returning. The patient spent a most restless night, the spasm occurring every twenty minutes.

On the morning of October 7, Hagner irrigated his bladder with salt solution and removed the catheter, fearing the presence of any foreign body in the bladder might account for the continuance of the spasm. Within a few minutes the tenesmus returned with all its former severity, although only a few drams of urine was present in the bladder. Careful examination showed neither prevesical or postvesical infection, and as there was a leukocytosis of 16,000, and as the patient was very stout, Hagner considered the possibility of not being able to diagnose an infection outside the bladder. As the tenesmus continued in spite of the perineal drain, he suggested a suprapubic cystotomy. A careful rectal examination was negative, so the cystotomy was done under cocain anesthesia. The patient was more comfortable for about half an hour when the tenesmus returned with all its severity. The patient died thirty-six hours after the second operation, frightful tenesmus continuing almost to the time of his death. On admission the patient's temperature was normal, pulse 124 and respiration 24. He was weak, however, and in poor physical condition following the previous week's loss of sleep and his continued suffering. His highest temperature was 101 F, but his pulse gradually increased in frequency. The autopsy revealed only a very mild grade of double pyelitis, merely a little reddening of the pelvis; the rectum was absolutely normal, as was the tissue surrounding the bladder. The peritoneal cavity was free of infection or neoplasm. The bladder and prostate presented pictures as described in the examination. Sections through the prostate showed fibro-adenomatous tissue but no malignancy. The only possible explanation Hagner can give as a cause for the unrelieved symptoms is that the septic condition of his bladder produced a toxic neuritis of the nerves supplying that viscus.

Arizona Medical Journal, Phoenix

October, I, No. 2, pp. 1-67

25 *The Scandal of Medicine. J. E. Bacon, Miami.
26 Therapeutic Use of Typhoid Vaccines, with Report of Nine Cases. R. E. Thomas, Phoenix.
27 Infant-Feeding. P. V. K. Johnson, Los Angeles.
28 Disease of Ear in Relation to General Diseases. E. R. Carpenter, El Paso, Texas.
29 Surgery of Right Hypochondrium in Light of a Newer Pathology. A. S. Lobinger, Los Angeles.

25. **Scandal of Medicine.**—Many of the so-called evils of modern medicine are discussed by Bacon. Among other things he says: Just at this time when the elimination of the mushroom medical schools all over the land was being slowly accomplished by amalgamation, to the great good of the recent graduates, the small ill-equipped post-graduate schools began to thrive. Seventy-five per cent. of these schools are conducted for the personal aggrandizement of their faculties. The teaching is a farce. The pupil is nothing but a witness of the performances of the chief actors, and gains nothing but an inspiration to do his own surgery. Six weeks of this, and, with the help of a surgical instrument shop next door, many a man returns to his field with new tools, new ambitions, but with only his old knowledge of anatomy, and begins to do surgery, 75 per cent. of which is badly done, ill-advised and much of it needless. This state of affairs is responsible for part of the present distrust, yet it is only the result of the struggle to survive. Surgery to-day occupies an anomalous position. Instead of being regarded as a branch of therapeutics, which it properly is, and being administered by specially trained men, as it should be, it has become, to many—professional and laymen alike—the end of all endeavor for the alleviation of human ills. This is a specialism run to riot, and has done incalculable harm to both the profession and its clientele. Needless operations and those done without a proper diagnosis, those which are done with an eye to the fee alone, can but bring dishonor on us all.

The making of a specialist is a much more complicated matter than the printing of cards or the painting of signs. On a foundation of a liberal education must be erected a broad, comprehensive knowledge of the general practice of medicine. This to be followed by special training in theory and practical work along the line to be followed. Surgeons, especially, must be made, not born, and among the materials which go to the making are natural aptitude, a mechanical turn of mind, a thorough knowledge of anatomy, applied physiology and pathology, a long service as chief assistant to a real surgeon, and last, but not least, a conscience, or in lieu of that, a wholesome fear of God. It seems to Bacon that the future of medicine lies in organization and a division of labor, equitably and fully rewarded. The problem of sanitation and preventive medicine belongs to the people through their several branches of government, and even now that branch of endeavor employs a certain proportion of men who are fairly well paid and are provided for. For those who are engaged in the actual care of the sick and injured, let there be an organization for each district with a certain number of people to serve. Let there be a hospital equipped with all scientific apparatus for the investigation of disease. Let the work be divided among the members according to their several abilities. Laboratory workers, pathologists, physicians, bacteriologists, obstetricians, eye, ear, nose and throat men and surgeons. Let each man devote his whole time to his work and to each patient impartially, knowing that his work will be adequately rewarded if he does it well. In this way will each develop into a specialist worthy of the name, and in this way will each patient receive all that science has for him without regard to his ability to pay.

Boston Medical and Surgical Journal

October 31, CLXVII, No. 18, pp. 603-638

30 Memorabilia: Extracts from Medical Notes Made by the Late Henry Ingersoll Bowditch, M.D., of Boston. V. Y. Bowditch, Boston.
31 *Cases of Prostatic Obstruction Presenting Overdistended Bladders. A. L. Chute, Boston.
32 *Artificial Pneumothorax in Advanced Unilateral Cases of Pulmonary Tuberculosis. E. O. Otis, Boston.

31. Prostatic Obstruction Presenting Overdistended Bladders.—Chute believes that the mortality in operations for the relief of prostatic obstruction depends largely on the condition of the kidneys; that urinary back pressure and the damage and embarrassment this inflicts on the kidneys is the commonest form of renal danger in prostatics. Its importance lies in the fact that a patient may be very near the uremic state without this being evident. Functional tests do not give absolutely definite information as to how near the uremic state a patient is. We get our most accurate idea of this from the symptoms of general toxemia that these patients show; they are referred to the digestive tract most often, less frequently to the nervous system. What Chute terms the "element of embarrassment" in these patients, the element that depends on back pressure alone, is capable of relief. This element that is capable of relief by proper preliminary treatment may be enough to determine the success or failure of operation. Chute emphasizes that our endeavor in these patients should be to relieve the back pressure without infecting the urinary tract or with the minimum of infection. In the aseptic cases this is best accomplished by a preliminary suprapubic cystotomy under local anesthesia; in the infected cases an inlying catheter is usually sufficient.

32. Artificial Pneumothorax in Pulmonary Tuberculosis.—To many previously considered hopeless advanced cases, Otis says, artificial pneumothorax, produced by the injection of nitrogen gas, offers chance of arrest, and the increasing number of reported successful cases by men of the highest authority, and extending over a considerable number of years, has fully attested its value and established this treatment on the firm basis of successful experience. The procedure is a simple one, so far as any operative skill is concerned, but it requires careful manipulation in order to get in between the two layers of the pleura. If firm pleural adhesions exist the lung cannot obviously be compressed, but it is surprising how infrequently this happens, even in very extensive disease. Not only in advanced tuberculosis but also in abscess of the lung, bronchiectasis, and dangerous hemoptysis is the operation applicable.

In performing the operation, a very careful determination of the exact condition of the diseased lung is made, and in every case the Roentgen-ray is used, particularly to ascertain whether or not pleural adhesions exist. Of course, it is evident that the other lung must, for the most part, be able to perform its function; not necessarily that its integrity should be complete, for there may be and often is a small amount of disease at the apex. Curiously and fortunately the artificial pneumothorax often exercises a beneficial influence on the diseased apex of the other lung, if it exists, and that, also, becomes arrested, the cause of which has been variously explained.

The conditions, then, which warrant a recourse to artificial pneumothorax are an advanced or advancing case of pulmonary tuberculosis which does not yield to the ordinary treatment, the disease being principally unilateral. After a careful physical and Roentgen-ray examination, the spot which appears to be free from adhesions is selected, and, by careful manipulation, a needle similar to an aspirating needle is inserted between the two layers of the pleura and through it nitrogen gas is slowly injected under slight pressure. Only a certain amount of the gas is allowed to flow in at the first attempt, depending on individual conditions, and the procedure is repeated, if all goes well, at frequent intervals until the lung is tightly compressed, as shown by the physical examination and a Roentgen-ray picture. When this has been accomplished, the subsequent injections are at longer intervals, sufficient to maintain the compression.

Journal of Cutaneous Diseases, New York

October, XXX, No. 10, pp. 587-652

33 Pellagra. O. S. Ormsby, Chicago.
34 Seborrhea Capitis. G. T. Jackson and C. W. McMurtry, New York.
35 Lichen Planus Diffusus, Followed by Vesicobullous, Infected Lesions: Cure of Latter with One Injection of Autogenous Vaccines. M. B. Hutchins, Atlanta.

Medical Record, New York

November 2, LXXXII, No. 18, pp. 787-832

36 Diagnosis of Mental Conditions. H. M. Friedman, New York.
37 Caloric Feeding in Tuberculosis. N. G. Seymour, New York.
38 *Tuberculosis of Brain; Report of Case of Tubercle of Left Optic Thalamus. J. L. Pomeroy, Monrovia, Cal.
39 Safety and Science in Nitrous Oxid Administration. R. C. Coburn, New York.
40 Therapeutic Resource in Hernia and Other Intestine Obstructions. W. F. Waugh, Chicago.
41 Two Cases of Tumor of Spinal Cord. T. A. Claytor, Washington, D. C.
42 *Simple, Efficient and Elastic System for Indexing Case Histories and Filing Current Literature and References. E. M. Staunton, Schenectady, N. Y.

38. Tuberculosis of Brain.—In Pomeroy's case the lesion consisted of a tubercle of the left optic thalamus. The patient was 30 years of age; had had no serious illness. His early habits were good. He denied excessive use of alcohol and venereal diseases. Four years ago the patient had a severe hemorrhage (hemoptysis) and was compelled to give up his work. In July he suffered severely from diarrhea. Had his right ear examined on account of buzzing. The doctor could not do anything for him. There was no discharge or symptoms of inflammation. Shortly afterward he complained of dizziness and his wife noticed that he showed slight mistakes in memory. He would tell the children to be quiet; then in a few minutes would ask them why they were so quiet. No history of swelling of the feet, no headache, no convulsions, or eye trouble of a serious nature. Once an electric fuse blew out and scorched his eyes, but it was not serious.

No particular symptoms were noted until August 26, when he was found in bed suffering from vertigo; his temperature was 99 F., pulse 110, respiration 22, coughed badly, very emaciated, gait unsteady, expression staring and blank; his skin showed no scars. There was a marked Romberg's sign; his reflexes were all normal, the knee jerks perhaps a little lively but equal; the right pupil was a little larger than the left and did not react as well for light. His left nasolabial furrow was a little deeper than the right. There was no tremor of tongue or face; his hands were slightly tremulous; there were no changes in sensation. At times one noticed a little nystagmus. Reddening of both disks, and a little blurring of the outlines. Memory impaired. Movements slow and uncertain. Gradually sank into coma and died about three months from onset of his first symptoms. On opening the lateral ventricles of the brain a tumor mass presented itself, in the left optic thalamus. The tip was somewhat translucent, the choroid plexus adherent. Slightly anterior was a pitting and depression. The tumor arose from the region of the optic thalamus projected internally and a little over the median line. Opposite thalamus normal. Examination showed this tumor to be tuberculous.

42. System for Indexing Case Histories and Filing Current Literature and References.—This system is on the order of the Dewey decimal system for indexing books. For instance, I Nervous System: 11 hysteria; 12 neurasthenia, etc. II Circulatory System: 21 heart and pericardium; 22 thrombosis and embolism, etc. There are fourteen such divisions and each is subnumbered.

Journal of Kansas Medical Society, Kansas City

October, XII, No. 10, pp. 381-420

43 Appendicitis in Children. A. Smith, Parsons.
44 Vaccines in Relation to General Medicine. O. B. Kiehl, Pittsburgh.
45 Professional Cooperation. F. Poe.
46 Dementia Grouchitica. T. A. Stevens, Caney.

November, XII, No. 11, pp. 421-460

47 Sinusitis. H. L. Alkire, Topeka.
48 Typhoid Vaccine. (Prophylactic.) M. D. McComas, Fall River.
49 Some Pathologic Conditions of Urethra and Their Treatment Through Urethroscope. C. S. Evans, Hutchinson

Journal of Medical Society of New Jersey, Orange

November, IX, No. 6, pp. 275-328

50 Importance of Care of Eye, Ear, Nose and Throat in School Children. J. Tomlinson, Bridgeton.
51 *Some Differences in Surgery of Children and Adults. E. W. Hedges, Plainfield.
52 *Administration of Anesthetics to Children. G. E. Tuers, Paterson.
53 Importance and Care of School Children's Teeth. J. E. Duffield, Camden.
54 Antibodies. W. F. Gutherson, Paterson.
55 Relation of Scientific Artificial Feeding to Reduction of Infant Mortality. J. Levy, Newark.

51 and 52. Abstracted in THE JOURNAL, August 10, p. 478.

New Mexico Medical Journal, Las Cruces

October, IX, No. 1, pp. 1-31

56 Practice of Medicine, Past, Present and Future. S. D. Swope, Deming.
57 Medical Standards, the Profession and the Laity. W. W. Lynch, Midland, Texas.
58 Relation of Medical Profession to Public. R. L. Bradley, Roswell.

New Orleans Medical and Surgical Journal

November, LXV, No. 5, pp. 339-414

59 Analysis of One Thousand Cases in Psychiatry. E. M. Hummel and H. Daspit, New Orleans.
60 Non-Penetrating Injuries of Eye. D. F. Waide, New Orleans.
61 *Pharyngeal Ulcer; Report of Case. J. L. Scales, Shreveport, La.
62 *Mastitis from Pediatric Standpoint. R. A. Strong, New Orleans.
63 *Ipecac Treatment of Amebic Dysentery. S. K. Simon, New Orleans.

61 and 62. Abstracted in THE JOURNAL, May 18, pp. 1537 and 1538.

63. **Ipecac Treatment of Amebic Dysentery.**—With a view toward establishing the permanent nature of the cure in patients treated exclusively with ipecac, Simon has endeavored to get into communication with as many of his former patients as possible. Only those, however, who had been subjected to the full course of treatment were included in the list. Likewise, all patients treated within the past six months were not considered applicable. In all, thirty-five letters were sent, requesting a report from each individual, of the subsequent status of health following the discharge as cured. Only fifteen replies were received. In each case a uniform and highly favorable result is reported. In no case has there been even a suggestion of a recurrence of the dysenteric attacks since a discontinuance of the ipecac. The interval thus elapsing has varied from almost four years to six months. All report otherwise splendid health records following their recovery, with a notable gaining of weight from five pounds to forty pounds.

The full plan of treatment includes the following essentials: 1. Absolute rest in bed over a period of at least two weeks. 2. A proper regulation and restriction of diet. Limit the amount of refuse in the intestinal canal to the minimum, so as to allow the drug freest access to the parasites. Only liquids should be allowed during the first week, preferably even to the exclusion of milk during the initial two or three days. Beginning with the second week the softer, easily digestible solids may be gradually added. There should be a restriction of the coarser foods, however, throughout and for several weeks following the treatment. The employment of a properly-coated salol pill. Simon has found 5-grain pills, freshly prepared, the best. The width of the salol coating should not exceed ⅛ inch, and preferably nearer 1/16 inch, but care should be taken that sufficient salol is used to prevent vomiting. The quantity of salol to each pill varies between 1½ to 2 grains. The relatively large dosage of salol, as high as 30 grains, with the maximum number of pills, has never been found in the least harmful. The ipecac should be of the best Rio variety, which is known to contain the highest percentage of emetin. Vedder has shown experimentally that the emetin alone of the alkaloids in the ipecac seeks out the destruction of the ameba. This is accomplished both by direct contact in the intestinal canal and indirectly through absorption, and subsequent excretion by the intestinal glands. A three-hour fast should always precede the administration of the pills. The initial average dose of the ipecac is 60 grains, though in special instances as high as 100 grains may be given. Each succeeding evening the dosage is reduced by 5 grains, or one pill. The employment of bowel irrigation or flushes should not be attempted during the administration of the ipecac. Otherwise, the aim of the drug is defeated by washing it out of the large bowel.

New York Medical Journal

November 2, XCVI, No. 18, pp. 831-932

64 The Edipus Complex. A. A. Brill, New York.
65 Ecchymotic Skin Reaction or Acquired Pseudohemophilia; Sicard's Syndrome. W. M. Barton, Washington, D. C.
66 Scientific Treatment of Insane a National Problem. T. W. Salmon, New York.
67 Disinfection, and Influence of Infected Rooms and Fomites in Transmission of Infectious Diseases. A. H. Doty, New York.
68 Use of Mixed Infection Vaccines in Skin Infections. J. G. Burke, Pittsburgh.
69 Manual Treatment of Abdominal Sympathetic. E. F. Cyriax and A. K. Cyriax, London.
70 Implantation of Fat into Tenon's Capsule After Enucleation. W. B. Weidler, New York.
71 Local Treatment of Two Pistol-Shot Cases Using Hot-Water Applications. F. Griffith, New York.
72 First Medical Clinic of Vienna; Von Noorden's Division. J. Gutman, New York.

Pennsylvania Medical Journal, Athens

October, XVI, No. 1, pp. 1-84

73 Progress of Medicine During Last Half Century. J. Tyson, Philadelphia.
74 *Breech Presentations. A. W. Tallant, Philadelphia.
75 Use and Abuse of Thyroid in Obesity. H. D. Jump, Philadelphia.

74. **Breech Presentations.**—Tallant says that breech presentations occur with almost equal frequency in primiparae and multiparae, and are often found in twin pregnancy. Labor is not specially prolonged. The maternal mortality is not affected by the presentation, but perineal lacerations are frequent. The infant mortality due to the presentation should be less than 10 per cent. The mortality is higher in cases of contracted pelves. Full spontaneous dilatation should be secured and the membranes kept intact, whenever possible. The second stage of labor should not be allowed to prolong itself. Early extraction is often life-saving. In other words, the best management of a case of breech presentation is in the first stage patience, in the second, action.

Philippine Journal of Science

October, VII, No. 1, pp. 1-41

76 In Memoriam: Paul Caspar Freer.

Southern Medical Journal, Nashville

November, V, No. 10, pp. 657-732

77 Florida State Medical Association. A. H. Freeman, Starke, Fla.
78 Advances in Surgery. R. C. Turck, Jacksonville, Fla.
79 Typhoid in Tampa, Fla. H. Byrd and C. W. Bartlett, Jacksonville, Fla.
80 *Relation of Warts and Moles to Malignant Growths. G. J. Winthrop, Mobile, Fla.
81 Constipation and Its Treatment. D. W. McMillan, Pensacola, Fla.
82 *Amebic Dysentery. J. B. Wallace, Tampa, Fla.
83 Dysmenorrhea. G. R. Holden, Jacksonville, Fla.
84 Intravenous Method of Administering Salvarsan. J. L. Kirby-Smith, Jacksonville, Fla.
85 Pain in Abdomen and Its Significance. P. C. Perry, Jacksonville, Fla.
86 Orthopedic Treatment of Infantile Paralysis. W. C. Campbell, Memphis, Tenn.
87 Ureteral Calculi. W. F. Clary, Memphis, Tenn.
88 Meat Inspection and Tuberculosis. A. D. Melvin, Washington, D. C.

80. **Relation of Warts and Moles to Malignant Growths.**—Winthrop emphasizes the necessity of the earliest possible recognition of malignancy and to plead for the routine removal of warts and moles as possible precursors of malignant tumors. The simple operation of removal of every wart and mole, especially when located in regions liable to trauma and irritation, will do much toward decreasing the mortality from malignant disease. The use of caustics, in attempting to remove these growths, is deprecated. Too often, he says; such measures simply start the malignant change and even if complete removal be accomplished, the time required, the pain, and resulting scar are more than from complete removal with the knife. Once malignancy is established complete and thorough extirpation of all affected tissue, together with all metastastic tumors, must be resorted to.

82. **Amebic Dysentery.**—The use of ipecac in the treatment of amebic dysentery in Florida, Wallace says, has at the present time practically supplanted all other measures. The method employed is that suggested by Dudley of Manila, about two years ago, and is as follows: The patient is put on a milk diet and confined to bed; after 4 p. m., takes neither food nor water for four hours, when he is given 30 grains of ipecac in six salol coated pills, swallowing these with as little water as possible. The patient takes no food or water during the night; the next day he takes water and milk liberally until 4 o'clock, and after a four hours' fast is given 25 grains of ipecac. The dose is reduced 5 grains daily until the 5-grain dose is reached. Patient is then put on light diet and daily dose of 5 grains continued for a week or ten days. If the pills are properly prepared there is little or no nausea. This treat-

ment has given excellent results; as to whether or not they are permanent sufficient time has not elapsed to determine. The local treatment by irrigations with various amebacidal solutions has failed to give satisfactory results.

Therapeutic Gazette, Detroit, Mich.

October 15, XXVIII, No. 10, pp. 685-760

89 Treatment of Incontinence of Urine in Women. H. A. Kelly, Baltimore.
90 Treatment of Ophthalmia Neonatorum. A. Bray, Philadelphia.
91 *Treatment of Burns by Liquor Cresolis Compositus U. S. P. R. P. Stoops, Crosbyton, Texas.

91. Treatment of Burns.—Stoops has used liquor cresolis compositus U. S. P. in upward of 100 cases of burns and believes that its virtues should be more generally known by the medical profession. The remedy is to be applied in the following manner: Bathe affected surface with 1 per cent. warm solution of liquor cresolis in water until debris is removed and parts are anesthetic. Puncture blebs and express serum. Apply to burns strips of gauze, or in large burn strips of paraffin paper smeared with an abundance of vaselin containing 1 per cent. of liquor cresolis comp. Cover with cotton and bandage. Allow dressing to remain four or five days, after which renew according to indications.

Vermont Medical Monthly, Burlington

October 15, XVIII, No. 10, pp. 235-260

92 Relation of Physician to Public Health. F. T. Kidder, Woodstock.
93 Tubal, Ovarian and Tubo-Ovarian Hernias. A. P. Heineck, Chicago.

Wisconsin Medical Journal, Milwaukee

October, XI, No. 5, pp. 137-168

94 *National Importance of Eugenics. F. I. Drake, Madison.
95 *City Health Department. J. M. Furstman, La Crosse.

94 and 95. Abstracted in THE JOURNAL, June 22, p. 1970.

Journal of Ophthalmology and Oto-Laryngology, Chicago

October, VI, No. 10, pp. 325-358

96 Giant Magnet in Extraction of Foreign Bodies from Eye. W. O. Nance, Chicago.
97 Ossiculectomy, with Report of Three Cases. F. Dobja, Chicago.

Journal of Tennessee State Medical Association, Nashville

October, V, No. 6, pp. 219-262

98 Injection Treatment of Hemorrhoids. A. B. Cooke, Nashville.
99 Hernia. C. N. Cowden, Nashville.
100 Recent Advances in Bone Surgery. E. T. Newell, Chattanooga.
101 Medical Witness. J. B. Sizer, Chattanooga.
102 One Hundred Consecutive Cases of Abdominal Section. J. H. Carter, Memphis.
103 Laewen's Method of Anesthesia. W. A. Bryan, Nashville.
104 Anaphylaxis. J. F. Gallagher, Nashville.
105 Goiter. L. W. Spradling, Chattanooga.

Lancet-Clinic, Cincinnati

October 26, CVIII, No. 17, pp. 439-466

106 Relation of Physician to the Individual Patient or Individual Family. J. E. Greiwe, Cincinnati.
107 Vincent's Angina: Its Frequency and Importance of Its Recognition. T. H. Halsted, Syracuse, N. Y.
108 Diagnosis of Tuberculosis of Infants by Laboratory Methods. B. F. Lyle, Cincinnati.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

October 19, II, No. 2703, pp. 1005-1088

1 *Maternity Ward at St. Thomas' Hospital, London, and Its Work During 1911. J. S. Fairbairn and J. M. Wyatt.
2 *Significance of Albuminuria in Pregnancy. E. H. Sledeberg.
3 Persistent Occipito-Transverse Presentation: Labor Obstructed at Pelvic Outlet. H. Chapple.
4 Plea for Universal Standard in Observation of Morbidity of Childbed. A. W. Russell.
5 Treatment of 1,305 School Children (London County Council) at Royal London Ophthalmic Hospital. F. Moxon.
6 *Transitory Bigeminal Pulse. L. Brunton.
7 Chronic Irido-Cyclitis. G. Coates.
8 Board of Trade Standard of Eyesight for Sailors. K. Grossmann.
9 Use of Tuberculin in Diseases of Eye. G. Mackey, L. C. P. Ritchie and L. Dor.
10 Treatment of Word-Blindness, Acquired and Congenital. J. Hinshelwood.
11 Intra-Ocular Hemorrhage. W. R. I. Pollock.
12 Salvarsan in Diseases of Eye. S. Stephenson.
13 Ocular Imbalance and Auditory Affections. A. A. Bradburne.
14 Differential Diagnosis of Esophageal Stenosis. O. Kahler, E. B. Waggett and A. B. Kelly.
15 Some Cases of Painful Fissure of Mouth of Esophagus. A. Bronner.
16 Syphilis as Cause of Esophageal Stenosis. W. Downie.

1. Maternity Ward at St. Thomas'.—During 1911, 383 patients were admitted, and of these 364 were delivered, nineteen being discharged undelivered, either because they were not in labor or because they were taken in for a complication of pregnancy and did not require induction of labor. One hundred and thirty-nine were primiparae and 244 were multiparae. There were 286 cases of uncomplicated labor, of which two were face and eight were breech and the rest vertex presentations. There were five normal cases of twin birth. Three hundred and seventy-two children were born during the year, of which 354 were mature; of these, twenty-seven were still-born and four died; eighteen were premature; three of these were still-born and six died. Of the abnormal cases there were: Eclampsia, seven; placenta praevia, eight; contracted pelvis, ten. Albuminuria, three; in two cases labor was induced and in the other came on naturally; all were discharged well. Pernicious vomiting, four; none severe, and all recovered without disturbance of the pregnancy; one had gastric lavage and one had saline per rectum. Accidental hemorrhage, five; none severe; in only one was there any interference, namely, dilatation by Champetier de Ribes' bag. Postpartum hemorrhage, six, treated by hot intra-uterine douches and ergot or pituitary extract hypodermically.

Obstructed labor thirty-two: (a) Delayed second stage, twenty-one cases; forceps delivery. (b) Obstructed breech, five cases; three extended legs; one hydrocephalus and one large head. (c) Locked twins; one case. (d) Transverse lie, four cases; one in a case of twins; internal podalic version in all. (e) Impacted shoulders, one case; cleidotomy having failed, one arm was amputated and delivery effected.

Various complications, fourteen cases: (a) Cardiac and pulmonary disease, seven cases. In one, a serous case of mitral stenosis, cesarean section under spinal anesthesia was performed; and although the patient improved for four days, a fatal attack of cardiac failure occurred on the fifth day. (b) Various, including tuberculous cystitis (fatal) and acute rheumatism. Maternal morbidity—that is, any case which shows a temperature of over 100 F.: Septicemia, two. Sapremia, nineteen. Gastro-intestinal, nineteen. Mammary, twenty-two. Reactionary, twenty-two. Emotional, six. Urinary, three. Pulmonary, three. Various, eight. There were seven maternal deaths during the year. Of these, three were in cases of eclampsia; one in a case of placenta praevia from septicemia; one in a case of tuberculous cystitis and pyelitis; one in a case of mitral stenosis, already referred to; one in a case of acute pneumonia. Labor was induced, but the patient died shortly afterward.

2. Albuminuria in Pregnancy.—There is no doubt in Siedeberg's mind that the presence of albumin during pregnancy is a serious indication, and is likely to be the forerunner of some complication in labor. It is a strong plea for the more frequent examination of the urine during pregnancy and the more careful supervision of the general health, in the latter months, by the obstetrician engaged to attend the woman.

6. Transitory Bigeminal Pulse.—Brunton's patient, a young man, aged 19, had been suffering from albuminuria for more than two years; he also had enlarged glands behind his sternomastoids, in the axillae and left groin. The pulse was small, soft and regular. The tension was only 97. The urine contained a few swollen renal cells, very few casts and no crystals. With the exception of slackness he had no symptoms, and when excited showed considerable activity. He had no other complaint. September 23, his systolic tension was 108 and the diastolic 60. The cardiac dulness and sounds were perfectly normal. There was still a large amount of albumin; he had several nodes in the back of the neck, in the groins and in the front of the abdomen. His pulse was quite regular, but while Brunton was taking it it assumed a bigeminal character. He believes that the peculiar rhythm of the pulse was due to the partial interference of two rhythms, muscular or nervous, or both—though the exact *modus operandi* may require a prolonged investigation and discussion.

British Journal of Children's Diseases, London

October, IX, No. 106, pp. 433-480

17 Hypersensitiveness. E. W. Goodall.
18 *Blood-Pressure in Scarlet Fever. J. D. Rolleston.
19 *Treatment of Nocturnal Enuresis in Children. Mello-Leitao.

18. **Blood-Pressure in Scarlet Fever.**—In a series of cases of scarlet fever the blood-pressure was found by Rolleston to be subnormal in 25 per cent., the extent and duration of the depression being as a rule in direct relation to the severity of the initial attack. In the great majority the highest readings were found in the first week; there was also a predominance of the lowest readings in the same week, but in a large minority the lowest readings were found in the second week. The normal tension was usually reestablished by the fourth week. In the majority of cases the blood-pressure was lower in convalescence than in the acute stage. In 48.4 per cent. of the convalescent cases the readings in the recumbent and erect positions were the same, or the recumbent was higher than the vertical record until convalescence was firmly established (hypotension of effort). With the exception of nephritis complications had little, if any, effect on the blood-pressure. In only a minority of the nephritis cases, twelve out of thirty-three, was the blood-pressure above normal, and the hypertension was never extreme nor of long duration. Rolleston says that sphygmomanometry in scarlet fever, as in most of the other acute diseases, is of little practical importance in the acute stage, but in convalescence may give some indication of the severity of the renal lesion which may be of value in subsequent treatment of the patient. Pronounced arterial hypotension, especially if accompanied by other signs of acute suprarenal insufficiency, should be treated by epinephrin.

19. **Treatment of Nocturnal Enuresis.**—Mello-Leitao has employed Cathelin's method (injections of artificial serum or of a 2 per cent. cocain solution into the epidural space), Babinski's method (lumbar puncture), and renal opotherapy on the patients of the Children's Hospital in Rio de Janeiro. The usual drugs (belladonna, potassium bromid and the alkalies) were always used before epidural injections, which were tried only in the refractory cases. Several children were cured by drugs. Of seven obstinate cases reported, five were cured with epidural injections, one with renal opotherapy, while one was entirely refractory.

Dublin Journal of Medical Science

October, III, No. 490, pp. 241-320

20 Diabetes. J. Smyly.

Lancet, London

October 19, II, No. 4651, pp. 1059-1128

21 Surgery of Peritoneum. H. Macnaughton-Jones.
22 Amebic Colitis in India; Prevalence, Diagnosis and Emetin Cure. L. Rogers.
23 *Injuries to Semilunar Cartilages; 449 Cases of Operation. A. M. Martin.
24 Changes Induced in Blood by Feeding; Study in Cellular Physiology. G. Mann and J. G. Gage.
25 Case of Double Cataract; Case of General Booth. C. Higgens.
26 *Actinomycosis Occurring in Tuberculous Subjects. J. B. Slattery.
27 Rupture of Hemorrhagic Corpus Luteum Into Intraligamentary Cyst, Resembling Ruptured Ectopic Pregnancy. S. G. Luker.

23. **Injuries to Semilunar Cartilages.**—During the period between the end of the year 1900 and the end of the year 1911, Martin has operated on 449 patients (413 hospital and thirty-six private) diagnosed as suffering from injury to the semilunar cartilages. All the patients made good recoveries, and in no case was there any resulting joint infection or any interference with the after-stability of the joint. In a few cases, and this applied particularly to those in which no definite pathology was found at the operation, complaint was made that the symptoms had not been relieved; otherwise the results were all that could be desired. Coal miners are the most frequent sufferers from torn semilunar cartilage, and in the present series, out of 449 cases 282 occurred in miners while following their employment. This gives a percentage of 62.8. Football players are also very liable to the accident. Out of the 449 cases the accident occurred, in the first instance, while playing football eighty-one times. This gives a percentage of 18. It will be noted, therefore, that the mining occupation and football playing are responsible for 80.8 per cent. of the injury. Other forms of sport supply 2 per cent. The internal semilunar cartilage is very much more often injured than the external. In the present series the former shows a percentage of 92, while the latter shows a percentage of 8. The right knee is slightly more frequently affected than the left, the percentage of the one being 53.3 and of the other 46.7. In the case of six patients both internal cartilages were removed, in one case at the same operation, and in the others with an interval of from six weeks to five and a half years. In one patient both external cartilages were removed within an interval of one year. In two cases, in both of which the internal semilunar cartilage was diagnosed as torn, on operation these were found normal. An incision was therefore made on the outer side of the joint, and the external cartilages, much torn and mutilated, were removed. These two cases show that sometimes it is impossible to diagnose whether in the case of an injured knee the internal or the external semilunar cartilage is at fault. In three cases from the same knee both semilunar cartilages were removed, in the first with three years', in the second with eight months', and in the third with eleven months' interval between the operations. In two cases in which, after operation for injury to the internal semilunar cartilage, the symptoms were not relieved the joint was again opened. The portion of cartilage left behind after the previous operation was found to be torn and so was removed with complete relief of symptoms.

26. **Actinomycosis in Tuberculous Subjects.**—Slattery cites three instances of actinomycosis occurring in patients with positive reactions to tuberculin used in diagnosis. All were looked on for a while as cases of active tuberculosis with foci in the neck glands or in the lungs. One with tuberculous adenitis had been considered suitable for a tuberculin course. But in no one was the acute process due to the tuberculous infection. They were met with at long intervals in different institutions. In one case the examination of discharges showed streptothrix.

Archives Générales de Chirurgie, Paris

September, VI, No. 9, pp. 1005-1132

28 *Diffuse Peritonitis from Rupture of Pyosalpinx. H. G. A. Lamouroux.
29 *Suture of Stab Wound of Trachea. (Faut-il suturer les plaies du conduit laryngo-trachéal?) J. Ducuing and J. Boularan.

28. **Peritonitis from Rupture of Pyosalpinx.**—Lamouroux compares an experience from his own practice with twenty-six similar cases from the literature, all of which he summarizes, and discusses the treatment. In two cases the rupture occurred during medical examination; in every case there was sudden violent pain, sometimes the patient fainted. This sudden onset was the first sign of trouble in his case. The rapid development of the peritonitis and the fatal outcome when left to itself led to the suspicion of poisoning in some of the cases on record. In all but one case the temperature rose at once. Recovery was the rule in the twenty-seven cases reviewed, only nine of the patients succumbing.

29. **Suture of the Trachea.**—A man of 54 had tried to cut his throat with a pocket knife and both trachea and larynx had been incised. Ducuing sutured the wound and the patient is now able to swallow normally although the epiglottis had been cut. There was no emphysema nor suppuration. The patient was fed for four days through a tube in the esophagus and he rinsed his mouth out frequently with hydrogen dioxid. Silk was used for the suture. Efforts at coughing were rather disturbing, and Ducuing advises morphin to combat this.

Archives Générales de Médecine, Paris

September, XCI, No. 9, pp. 773-864

30 *Relations Between the Lungs and Genital Organs of Tuberculous Women. H. v. Bardeleben.
31 Diagnosis of Aspirated Foreign Bodies. (Diagnostic des corps étrangers des voies aériennes.) H. Abrand.
32 Cure of Ozena by Injection of Paraffin and Superheated Air. E. Chapellier.
33 *Iodin Vapors in Treatment of Ear Disease. (L'enfumage iodé en chirurgie auriculaire.) E. Chapellier.

34 Local Anesthesia in Operations on Ear and Upper Air Passages. A. Martin.
35 *Subcutaneous Injection of Oxygen in Treatment of Pulmonary Tuberculosis. R. Bayeux.

30. **Relations Between the Lungs and Genital Organs in Tuberculous Women.**—Bardeleben's experience has been that genital tuberculosis is usually secondary to a pulmonary process, and that the placenta or the region where it is implanted is the focus of a reciprocal and retroactive effect between the lung process and the genital process. The more active the lung process, the more unfavorable the influence of the pregnancy (90 per cent.). On the other hand, the chances for immobilization and circulation of the bacilli in the blood are less the more latent the pulmonary tuberculosis, and hence the rarer aggravation of the tuberculosis during a pregnancy (15 per cent.). Excision of the site of the placenta removes at one stroke the entire dangerous focus. Artificial abortion is useful only when there are very few tubercle bacilli in the placenta. The ovaries play no part in the aggravation of pulmonary tuberculosis during a pregnancy, while removing them merely reduces the general resisting powers and has no influence on the tuberculosis. Hysterectomy is useful, but equally good results may be anticipated from mere excision of the site of the placenta.

33. **Iodin Vapors in Treatment of the Ear.**—The Journal recently described the application of iodin vapors in gynecologic affections, and Chapellier here reports the advantages of the method in treatment of chronic otitis media. He used a home-made apparatus for the purpose, placing the iodoform in an ordinary square ink-stand with two glass tubes entering through the stopper, one connected with a rubber bulb, the other with a cannula. He vaporizes the iodoform by heating it with a red-hot metal bar or the actual cautery tip. The stopper is then replaced at once and the iodin vapors from the decomposed iodoform are pumped through the cannula into the ear. The result was surprising in the typical case reported in detail. He found it necessary to clear the ear out thoroughly before and after forcing of air through the eustachian tube into the middle ear by expiration with nose and mouth closed; this Valsalva measure is a very important preliminary to clear the passages for the iodin vapors.

35. **Subcutaneous Injection of Oxygen in Treatment of Pulmonary Tuberculosis.**—Bayeux now has a record of thirty-six cases in which he has applied this method during the last year and a half. He reviews his experiences in detail and gives an illustration of the portable apparatus he uses for the purpose. In more than 700 injections of the kind he has never had any accident, local or general. He makes the injections in the lower part of the trunk, and rarely injects more than a pint a day, as a rule repeating the injection every three days. The more serious the condition, the shorter the intervals. He has found that oxygen is absorbed more slowly in direct proportion to the gravity of the tuberculous intoxication—this has proved a useful prognostic sign.

Journal d'Urologie, Paris

September, II, No. 3, pp. 321-460

36 *Fistula Between Intestine and Bladder. (Etude des fistules vésico-intestinales.) G. Pristavesco.
37 Sarcoma of the Prostate. V. Pauchet.
38 Petrification of Microorganisms in Urine Sediment and Pseudocrystals. G. Rodillon.
39 Double Urethra. (Urètres doubles.) M. Lebrun.

October, No. 4, pp. 461-620

40 *Test Polyuria. (Critique de la polyurie expérimentale.) F. Legueu and B. Lagarde.
41 *Operative Treatment of Kidney Calculi. A. Pousson. Commenced in No. 2.
42 *"Prostatism with Normal Prostate?" (Existe-t-il un prostatisme vésical?) G. Marion.
43 *Duration of Non-Operated Renal Tuberculosis. Rafin.
44 Roentgenoscopic Indications for Pyelotomy. Arcelin and Rafin.
45 *Latent Disease of Other Kidney After Supposed Healing of Renal Tuberculosis Under Conservative Treatment. M. Heitz-Boyer.
46 Diagnosis of Traumatic Nephritis. M. Heitz-Boyer.
47 Urology in America During 1911. Faxton Gardner.

36. **Bowel-Bladder Fistula.**—Pristavesco summarizes the details of forty-two cases published in the last few years, classifying them according to the segment of intestine involved. They are generally due to trauma, inflammation, cancer or tuberculosis and exceptionally to actinomycosis or syphilis. Urine may be passed through the anus or gases and fecal matter through the urethra. Every effort should be made to prevent local infection and correct the condition. Various technics have been used, but the peritoneal and transvesical routes have given the best results. A previously unpublished case is reported in detail with the cystoscopic findings before and after the cure by a hypogastric incision and endovesical suture of the opening. Pascal in 1900 compiled 286 cases, all but 25 per cent. in men.

40. **Test Polyuria.**—Legueu and Lagarde present an array of clinical evidence to show that the polyuria which follows the test drinking of 700 gm. of water does not depend exclusively on the kidney. Other elements probably intervene in the elimination of the fluid before it reaches the kidney. When nephrectomy is being considered and the findings of the test in the other kidney are favorable, the functional integrity of the latter may be counted on. But, on the other hand, when the findings are unfavorable, this alone must not be accepted as indicating positively that the second kidney is functionally incapable. The charts are given of the findings in thirty-three applications of the test to thirteen patients before and after nephrectomy for tuberculosis, calculi or traumatic rupture of the kidney.

41. **Operative Treatment of Kidney Calculi.**—Pousson's illustrations and tabulation of the details form a review of the ten cases in which he was able to locate the calculi by palpation and remove them by an operation, and of the twenty-two similar cases in which there was complicating suppuration. The article is accompanied by nine stereoscopic views. The ultimate outcome after nephrectomy proved better than after nephrotomy alone. In four cases the kidney had to be removed later after the nephrotomy, with ultimate recovery. Infection renders the outcome of conservative measures very dubious. There is not only the danger of concrements in the other kidney, but the diseased kidney may have affected the other in various reflex ways. But his experience has been that calculi develop only exceptionally in both kidneys, while the reflex disturbances always promptly subsided after removal of the diseased kidney. Ten of his twenty-two septic patients were cured by nephrectomy, three for over eight years and four for over three years. One patient passed through a normal pregnancy two years later and has been in good health during the four years since.

42. **Prostatism with "Normal" Prostate.**—Marion states that he always finds some lesion or malformation sufficient to account for the disturbances in micturition. In one man of 44 with retention, distention and dribbling of urine, nothing abnormal could be found, but two years later other symptoms of tabes developed. In another group of cases the apparently normal prostate had some bunch or lobe enlarged or some small adenoma or other lesion, closing the passage by valve action. In one case he removed the neck of the bladder and upper part of the urethra for inveterate retention, but was convinced that he had performed a useless operation as the parts seemed to be entirely normal. On slitting the urethra, however, he found a small papillomatous growth on the point of becoming malignant. Complete recovery followed, and encouraged by this success he operated in two other cases of what seemed to be "prostatism sans prostate." In one case a small protuberance on the prostate projected up into the bladder and in the other minute adenomas in the sphincter had been causing the trouble. Marion has operated on the prostate in 155 cases and has never seen an instance of Young's sclero-inflammatory median bar. In any event he advises opening the bladder in case of trouble from prostatism, and excision of the neck of the bladder if nothing can be found to explain the disturbances. The illuminating findings and excellent outcome in the three cases reported confirm the wisdom of the measure.

43 and 45. **Duration of Tuberculosis of the Kidneys Without an Operation.**—Rafin compares the ultimate outcome in his 168 cases with those recently compiled by Wildbolz (mentioned in The Journal, Feb. 3, 1912, p. 380). Of the eighty-four patients still living, twenty-eight, that is, 16.6 per cent. of the total 168 patients are still in fair general health; 53

per cent. have died. Only 14.8 per cent. died without some other localization of the tuberculosis, showing that the renal tuberculosis under expectant or conservative treatment frequently becomes complicated with tuberculous processes elsewhere. The data reviewed confirm the gravity of renal tuberculosis. Very few patients can bear it and maintain good general health for years, although this does occasionally occur. Probably the process in these cases leads to exclusion of the kidney, amounting to a clinical cure, or the process may be of a peculiarly torpid nature.

Heitz-Boyer reports two cases of supposed recovery from tuberculosis of one kidney in which the diagnostic tests revealed serious impairment of the other kidney, although there were none of the usual signs of chronic nephritis. The supposedly healed and excluded kidney had evidently exerted a deleterious influence on the other kidney in the course of time, and serious trouble followed, one patient dying in uremic coma. The other was saved by removal of the excluded kidney at the first clinical manifestations of trouble. Even the spontaneous cure of a tuberculous process in the kidney is thus shown to entail serious dangers—another argument, he states, in favor of early operative treatment of renal tuberculosis.

Presse Médicale, Paris

October 9, XX, No. 82, pp. 821-828

48 Exaggerated Motor Functioning of the Stomach. (L'estomac hypertonique.) E. Enriquez and Gaston-Durand.

October 16, No. 84, pp. 845-852

49 The Lipoids of the Genital Glands. (Les lipoides de l'ovaire, du corps jaune et du testicule. Propriétés homo-stimulantes, physiologiques et thérapeutiques.) H. Iscovesco.

Revue de Chirurgie, Paris

October, XXXII, No. 10, pp. 517-656

50 *Suture of Traumatic Separation of Lower Epiphysis of the Femur. E. Desmarest.
51 *Primary Epithelioma of the Clitoris. A. Basset.
52 Aseptic Decay of Uterine Fibromyomas. J. Barbouth.
53 *Fractures of Neck of the Femur in Children and Youths. G. Worms and A. Hamant. Commenced in No. 9.

50. Separation of the Lower Epiphysis of the Femur.—Desmarest reports an excellent functional outcome in the case of a boy of 11 with traumatic separation of the epiphysis and displacement. He opened the fracture region and sutured the fragments in place, holding them with a little aluminum plate and six screws, not draining, and then applied a plaster splint which held the foot in dorsal flexion and immobilized the entire leg. The temperature was slightly higher for a few days but the child did not complain of pain in the knee, and recovery was soon complete notwithstanding the total neglect of the massage and passive exercises of the leg that had been strictly ordered. Desmarest summarizes from the literature six similar cases in which the fragments were held in place with screws or a metal plate or both. The outcome was excellent in every case but one in which the child succumbed to scarlet fever before the wound had healed. One child of 8 was able to walk and use his knee normally six weeks after the operation (Drew).

51. Cancer of the Clitoris.—Basset has found records of 147 cases of primary epithelioma of the clitoris, including two personally observed. The prognosis seems to be unusually grave with these growths as recurrence soon followed, over 61 per cent. of the patients succumbing to this cause within eight months on an average. The recurrence was generally in the connected lymph-nodes, and Basset urges that they should all be excised with the primary growth in one piece, his illustrations showing that this is feasible and simple, and would certainly increase the number of permanent recoveries beyond the 26.3 per cent. now on record; the survival in these cases has been from two to five years to date. Over 40 per cent. were permanently cured by an operation including removal of the lymph-nodes, and only 22.2 per cent. of those whose tumors alone were removed. Recurrence followed in 60 per cent. in the latter group and in 36 per cent. in the former, but the simple, single-mass method, advocated by Basset, was applied in only one case.

53. Fracture of the Neck of the Femur.—Worms and Hamant comment on the way in which the Roentgen ray has shown the incorrectness of the old idea that fracture of the neck of the femur is very rare in the young. They have encountered nine typical cases of fracture of this kind and review the literature on the subject. The symptoms in the young are generally the same as in adults, but sometimes there may be no pain, deformity or disturbance in walking. This is liable to be the case with an incomplete fracture, and the patients may have forgotten their traumatism when coxa vara develops later. The insignificance of the trauma causing the fracture is frequently mentioned in the cases on record: this seems to be peculiar to fracture of the neck of the femur in the young and in the aged. The special diagnostic points and technics are discussed; treatment should aim in particular to ward off coxa vara. With a recent fracture, rest in bed with immobilization of the leg for several weeks is indispensable, then a period of massage and cautious exercise of the hip joint after which the leg can be used but with great care not to overburden it until the bone has recovered its normal resistance. Operative measures, especially horizontal or oblique subtrochanter osteotomy, have given good results, correcting the tendency to adduction and outward rotation and improving the gait in old cases. It even lengthens the limb if it is followed by prolonged extension.

Revue de Gynécologie, Paris

August, XIX, No. 2, pp. 97-192

54 Ovarian Cyst Opened Through the Vagina. (Cas de kyste de l'ovaire praevia traité avec succès par la ponction vaginale.) X. Bender.
55 *Resection of Cancerous Rectum by Vaginal Route. A. Chalier and E. Perrin.
56 Treatment of Genital Tuberculosis in Women. M. Patel.

55. Resection of Rectum for Cancer by the Vaginal Route.—Chalier and Perrin state that there were only two operative fatalities among the twenty-nine cases on record, including a case from their own practice. The immediate mortality was thus only 6.89 per cent. and as most of the operations date from before 1900, this mortality now would be much less. The ultimate outcome is known in only a few cases but two patients are known to be in good health after four years. Recurrence does not seem to be any more frequent than with other technics; only eight cases of recurrence are known in the twenty-two cases followed for some time. The great advantage of the method is that the anus is left intact and continence is certain if the innervation is not interfered with too seriously. Five illustrations show the various steps of the operation and the T incision, the long end carried into the perineum but slanting off below to spare the anus. Ample oversight is thus afforded. The cancer must be well defined, limited, not very adherent, and at an accessible point to be amenable to this technic, that is, in the ampulla or space just above. The indications for the transvaginal route are thus practically the same as for resection of the coccyx or sacrum or both in men.

Semaine Médicale, Paris

October 9, XXXII, No. 41, pp. 481-492

57 Does the Carotid Gland Have an Internal Secretion? C. Frugoni.

Archiv für Verdauungs-Krankheiten, Berlin

XVIII, No. 5, pp. 371-700

58 Digestive Ferments in Diagnosis of Stomach Disease. (Ueber die diagnostische Bedeutung der Fermentuntersuchungen, speziell des Labfementes des Magensaftes bei Magenkrankheiten, zugleich ein klinischer Beitrag zur Frage der Wesensein heit von Lab und Pepsin beim Menschen.) L. Rutimeyer.
59 Digestion of Fat in Liver and Pancreas Disease. (Zur Frage von den Störungen der Fettverdauung bei den Erkrankungen der Leber und des Pankreas.) E. K. Tauber.
60 Fat in the Secretions and Excreta. (Ueber den qualitativen Nachweis von Fett in den Sekreten und Exkreten mit bes. Berücksichtigung der Fäzes.) H. Löhrisch.
61 Eosinophil Proctitis; Four Cases. E. Fricker.

Berliner klinische Wochenschrift

October 14, XLIX, No. 42, pp. 1969-2016

62 *Principles of Modern Tuberculin Treatment. B. Möllers.
63 *Emphysema at the Apex in Pulmonary Tuberculosis. (Lungenspitzenemphysema.) O. Orszag.
64 Iodin in Treatment of Pulmonary Tuberculosis. W. Nieveling.
65 *Rest and Fresh Air in Treatment of Convalescents and the Chronic Sick. (Liegekuren für unbemittelte Rekonvaleszenten und chronisch Kranke.) E. Aron.
66 Spinal Cord Disease with Anemia; Fatal in Three Months. E. Richter.

67 *Splenic Anemia. S. Isaac.
68 *Central Station for Research on Anthropoid Apes. (Errichtung einer Station zur psychologischen und hirnphysiologischen Erforschung der Menschenaffen.) M. Rothmann.
69 Study of the Bile in the Living Organism. (Bakteriologische und chemische Untersuchung der Galle in vivo; diagnostisches Verfahren in der Frühdiagnose des Typhus abdominalis.) G. Kiralyfi.
70 Experimental Research on Nature of the Wassermann Reaction. A. Bittorf and H. Schidorsky.
71 Influence of Pressure on the Viscosity Coefficient of the Blood. J. Glaubermann.
72 Cholesterin Esters in the Blood-Corpuscles. (Die Cholesterase der Blutkörperchen.) F. Röhmann.
73 Sensitiveness of the Viscera. (Ueber die Sensibilität in der Bauchhöhle.) C. Franke.

62. **Principles of Tuberculin Treatment.**—Möllers declares that the campaign against tuberculosis demands that tuberculin treatment should not be limited to specialists but should be applied by general practitioners wherever needed, in combination with the usual hygiene-dietetic treatment. In the early cases the tuberculin treatment can be given to out-patients. The characteristic of modern methods is to give the tuberculin in a mild form, very slowly increasing the doses while avoiding to the utmost every reaction. The subcutaneous route is preferred, and a single course of treatment is not enough; in many cases years of repeated courses may be necessary, keeping the patients under constant supervision.

63. **Emphysema at the Apex of the Lung.**—Orszag says that emphysema in the apex of the lung often gives puzzling findings above a tuberculous focus. It is most common in the chronic fibrous cases with comparatively slight tendency to destructive processes. The tuberculous focus generally develops about an inch below the apex, and consequently there is a zone of sound tissue above. Assumption of emphysema in the apex explains the clearing up of an area of dulness without this being necessarily a sign of healing. The apical emphysema may be the reason why the focus shown by roentgenoscopy cannot be detected by percussion.

65. **Fresh Air Cures in Public Parks.**—Aron pleads to have a sheltered part of public parks set apart for convalescents and chronically sick persons, where they can spend the day in comfortable reclining chairs. The expense of the chairs would be slight, while the advantages for convalescents would be incalculable.

67. **Splenic Anemia.**—Isaac adds another to the few cases on record in which anemia with extreme enlargement of the spleen, but the liver normal, was observed for several years. His patient died finally from an intercurrent streptococcus infection. The liver was intact. Senator insists that only the cases with intact liver should be classed as Banti's disease.

68. **Research on Anthropoid Apes.**—Rothmann has already made a commencement in this line, having installed some chimpanzees on the Canary Islands where he thinks climatic and other conditions are peculiarly favorable for research on the physiology and psychology of anthropoid apes. He urges the importance of such research, especially on the brains before these animals become extinct. It seems impossible to conduct research of the kind in temperate climates as the monkeys die off so soon.

Correspondenz-Blatt für Schweizer Aerzte, Basel

October 10, XLII, No. 29, pp. 1097-1128

74 The Eosinophils in Various Diseases. (Ueber die von Dunger angegebene neue Zählungsmethode der eosinophilen Zellen und über das Verhalten dieser Zellen bei verschiedenen Krankheiten.) M. Gelbart.
75 Importance of Rigidity of the Muscles Over Pulmonary Disease. (Pottenger's Lehre von den Muskelveränderungen bei intrathoracalen Entzündungen, speziell bei Lungentuberkulose.) O. Amrein.

Deutsches Archiv für klinische Medizin, Leipsic

CVIII, Nos. 1-2, pp. 1-186. Last indexed Oct. 19, p. 1496

76 Human Arterial Blood. Hürter.
77 Heart Movements Propagated to Outer Wall. (Einige durch die Herzaktion verursachte Bewegungen der Brustwand und des Epigastriums.) G. Lang.
78 Direct Percussion with One Finger (Ueber isolierte Perkussion.) W. P. Obrastzow.
79 Fat Absorption and Proteid Metabolism in Diseases of the Pancreas. (Versuche an Pankreaskranken.) O. Gross.
80 Necropsy Findings in Case of Trichiniasis. (Zur Kenntnis der Trichinellenkrankheit des Menschen.) H. Knorr.
81 Significance of the Auricular Liver Pulse. G. Joachim.
82 Experimental Regeneration of Hemoglobin. (Abbau des Hämoglobins. II.) L. Hess and P. Saxl.

Deutsche medizinische Wochenschrift, Berlin

October 10, XXXVIII, No. 41, pp. 1913-1960

83 *Tuberculous Meningitis. P. Krause.
84 Influence of Exercise on Development of Internal Organs. (Einfluss der Bewegung auf den wachsenden und erwachsenen Organismus.) F. Külbs.
85 Displacement of Heart Toward the Right. (Dextroversio cordis und ihren Einfluss auf das Elektrokardiogramm.) W. Neumann.
86 Both Human and Bovine Tubercle Bacilli Found in Spontaneous Tuberculosis in Monkeys. E. A. Lindemann.
87 Changes in Blood in Potassium Chlorate Poisoning. (Blutveränderungen bei Vergiftung mit Kalium chloricum.) O. Huber.
88 *Importance for Surgeon of Temperature in Both Axillæ. (Temperaturmessungen in beiden Achselhöhlen und ihre Bedeutung für die Chirurgie.) Zalewski.
89 Superior Advantages of Nilson's Modification of Narath's Operation for Varicocele; Eight Cases. W. Wolf.
90 Chemical Therapy of Sepsis. P. Rosenstein.
91 Vasectomy for Sterilization of Degenerates. A. Kappis.
92 Treatment of Post-Partum Hemorrhage. (Zur Behandlung atonischer Blutungen.) H. H. Schmid.
93 Modification of Serodiagnosis of Syphilis. (Ueber die von Porges angegebene und von Hermann und Perutz modifizierte Syphilisreaktion.) S. A. Gammeltoft.
94 Serodiagnosis of Cancer. (Serodiagnostik der Geschwülste mittels Komplementablenkungsreaktion nach v. Dungern.) G. Wolfsohn.
95 The High-Frequency Current in Therapeutics. (Zur technischen Kritik der Hochfrequenz-Therapie.) P. Grabley.
96 Roentgenoscopy of Larynx and Trachea. A. Rethi.

83. **Tuberculous Meningitis.**—Krause comments on the variability of the early symptoms of this disease which, he reiterates, is always secondary. A primary focus in the bronchial or mesenteric lymph-nodes is common in the young. Vomiting is a frequent initial symptom but headache is generally the first sign of trouble, with restlessness and slight fever. In a recent case gastro-intestinal symptoms for three weeks with headache and slight fever were ascribed by the patient to eating spoiled meat, but at the end of the third week the typical picture of meningitis developed. In some cases the mind is affected from the first; occasionally the meningitis develops in drinkers after delirium tremens. In some cases the meningitis is ushered in by epileptic seizures, possibly confined to one side of the body. Tuberculous meningitis is often confounded with typhoid, especially in children. Acute infectious diseases in children are often accompanied by symptoms suggesting meningitis, so that we must not be too hasty in diagnosing tuberculous meningitis. Examination of the blood may reveal the bacilli. If there is diffuse bronchitis and cyanosis, a miliary irruption is probable. The prodrome of tuberculous meningitis is generally longer than with meningitis of other nature; there are usually weeks of ill health with the former. He had recently two cases of epidemic poliomyelitis in which the clinical picture was that of tuberculous meningitis; both patients recovered. He is convinced that the virus of epidemic poliomyelitis is responsible for some of the cases of serous meningitis on record. The literature contains examples of cases in which focal symptoms persisted for years before the picture was completed by other symptoms of the tuberculous meningitis. In a recent case the patient had headache, vertigo, tinnitus and attenuation of the right abdomen reflex for weeks, and then the symptoms subsided; there is probably some tuberculous process involved which at first produced symptoms of beginning tuberculous meningitis. Many authors think that the prognosis is invariably fatal, but Krause sees no reason why tuberculous foci might not heal in the meninges as well as anywhere else. He cites necropsy findings of healed tubercular meningitic lesions and summarizes eight cases of complete recovery from meningitis with tubercle bacilli in the spinal fluid. In rare cases the disease may have a stormy onset and prove fatal in a few days, but as a rule the course is from two to five months. Careful nursing is of supreme importance, with calomel or castor oil purges. Tuberculin is of no use and may aggravate the inflammatory reaction in the meninges. In one of his cases the disease was accelerated by it. He thinks it would be too dangerous to inject the tuberculin directly into the spinal canal. He says that no case has yet been published in which benefit from iodin was beyond question, but he urges further experimental research on drugs to influence tuberculous meningitis. Lumbar puncture gives often great relief but it is only transient, as also the benefit from puncture of the ventricle, or trephining. Bier has extolled the beneficial influence of therapeutic passive

hyperemia by constriction from an elastic band around the neck in case of meningitis originating in the ear. Symptomatic measures have not shown much progress during the last decades, but Krause found that the patients were generally relieved, as in seasickness, when moist heat was applied to the head. Purges and diuretics are useful but do not influence the course of the disease. Mercurial inunctions have benefited in some cases, but he thinks that the affection in these cases must have been of syphilitic origin. Treatment should always be persevered in as the ultimate outcome may prove the diagnosis of tuberculous meningitis erroneous. [Tyson states that the cases whose recovery surprised him were invariably those in which he had used cod-liver oil inunctions.]

88. **Importance of Taking the Temperature in Both Axillae.**—Zalewski found a difference in the temperature in the axillae in healthy persons and the difference was still more marked in pulmonary tuberculosis, pneumonia, etc. In 120 surgical cases he found differences up to half a degree Centigrade in the temperature of the two sides, in case of a unilateral morbid process. The higher temperature on one side was a guide to the progress of the morbid process, and he urges the importance of taking the temperature always on the side involved if only one axilla is tested. Entirely erroneous conclusions may be reached when the temperature is taken indiscriminately on either side. This double axilla temperature often proves useful in indicating the necessity for changing the dressings, etc.

Medizinische Klinik, Berlin

October 13, VIII, No. 41, pp. 1651-1692

97 Trauma and Cancer. (Bedeutung des Traumas für Entstehung und Wachstum krankhafter Gewächse.) O. Lubarsch.
98 *Congestion in the Abdomen. (Ueber Plethora abdominalis und ihre praktische Bedeutung. J. Schütz.
99 Recent Progress in Laryngology and Rhinology. O. Kahler. Commenced in No. 40.
100 Abortion with Intra-Uterine Pessaries. (Ueber Abtreibung mit Intrauterinpessaren.) L. Bürger.
101 Physical Examination of Abdomen Through Ring Compressor. M. Silberberg.
102 Auscultation at Mouth and Nose. C. Petersen.
103 *Damming Blood in Limbs in Treatment of Heart Disease. (Ueber therapeutische Beeinflussung des insuffizienten Herzens durch Venenstauung.) C. S. Engel.
104 Modified Wassermann Test. (Der "verfeinerte Wassermann.") E. Kromayer and Trinchese.
105 Psychology of Animals. (Stimmen zur Psychologie der Tiere.) V. Franz.
106 General Principles for Treatment of Habitual Constipation. M. Kahane. Commenced in No. 40.

98. **Primary Congestion in the Abdomen.**—Schütz has encountered a number of patients, who presented puzzling symptoms suggesting those of atony of the stomach and enteroptosis, hyperacidity, neurasthenia and heart disease, while the rounded paunch indicated a well nourished condition. On stripping for examination, however, the arms were found thin, the chest flat and the abdomen was seen to be distended. The heart dulness may be enlarged toward the right and the urine sometimes contains casts and albumin while the liver is slightly enlarged and tender at times. When the patient reclines, the heart dulness subsides to normal outlines; the heart in these cases is merely forced up by the distention of the abdomen. Such patients may be constipated or not, but there is generally a tendency to hemorrhoids and high blood-pressure. The one feature common to all the cases is the passive hyperemia in the abdominal vessels; this explains the various symptoms, and the benefit under treatment directed exclusively to restoring normal conditions in the circulation throughout the abdomen confirms the correctness of the assumption of abdominal plethora as the idiopathic cause for the disturbances observed. Treatment should aim to deplete the vessels by diverting the blood to the skin and by systematic saline purges, massage of the abdomen and dietetic measures to ward off constipation, avoiding gas-forming foods and all substances liable to injure the intestinal walls. Balneologic measures to divert the blood to the skin may include carbonated baths, massage, exercises, etc. He regards the assumption of this primary circulatory disturbance in the abdomen as of great importance in warding off arteriosclerosis and nervous and mental disease from intestinal auto-intoxication. If such patients are not thoroughly examined their rounded paunch suggests that they are over-nourished, and treatment is instituted based on the wrong assumption that the trouble is a tendency to obesity, when in reality the treatment should be along entirely different lines.

103. **Damming the Venous Blood in the Limbs in Treatment of Heart Disease.**—Engel reiterates his previous assertions in regard to the great subjective benefit from arresting the venous circulation in the limbs in cases of heart disease. He has coined the term "phlebostasis" for it, and has been studying the effect with the sphygmograph on numbers of healthy and sick persons. By damming off so much of the venous blood the severest circulatory disturbances are mechanically combated; the arterial blood proceeds on its way unhindered while the heart is relieved from much of the bulk of the venous blood. The passive distention of the right auricle grows less and the venous blood left in the trunk can be propelled much more easily into the lungs. The capillaries in the lungs receive less blood and are enabled to contract better while the lung capacity is increased with consequent deeper inspiration of air, greater intake of oxygen and its better distribution to the coronary vessels and hence to the heart muscle, with its consequent rejuvenation. The effect is also felt elsewhere, especially in the medulla oblongata and viscera. Once the vicious circle of the venous stasis is broken up in this way, the whole clinical picture may become transformed as after administration of digitalis. The curves show improvement in the heart action, the breathing becomes deeper and the tendency to bronchial catarrh, so frequent in these patients, seems to subside after a few sittings, as also the symptoms of congestion in the brain. He suggests that the method might prove useful also in meningitis and other intracranial processes. The "phlebostasis" in heart disease also seemed to benefit the liver and kidneys. He adds in conclusion that this method of tying off the limbs does not harm even when frequently applied—in direct contrast to digitalis—while the ease and simplicity of the technic commend it as a valuable acquisition to the physical means of treating disturbances in the circulation.

Münchener medizinische Wochenschrift

October 8, LIX, No. 41, pp. 2269-2264

107 *Non-Operative Treatment of Cancer. (Nichtoperative Behandlung der Geschwülste.) V. Czerny.
108 *Nervous Disease in Pregnancy. (Nervenerkrankungen in der Gravidität.) A. Saenger.
109 Curves Showing That Both Lungs Do Not Always Work Synchronously. (Bilaterale Pneumogramme in Krankheiten der Lungen und Pleuren.) G. Richter (St. Louis).
110 *Quantitative Color Test for Albumin. M. Claudius.
111 Teleangiectasic Granuloma. (Botryomykose.) G. E. Konjetzny.
112 *Enucleation of Tonsils with the Finger (Totale Enukleation der Gaumenmandeln.) E. Borchers.
113 *Surgical Treatment of Tropical Dysentery. O. Müller.
114 *Relief of Headache by Inducing Copious Secretion in the Nose. (Entstehungsweise der Kopfschmerzen und ihre rationelle Behandlung.) A. Lorand.
115 Psychology of Youthful Criminals. (Jugendliche Verhafteter.) K. Rupprecht.
116 *Terrace-Balcony Houses. D. Sarason.

107. **Non-Operative Treatment of Cancer.**—Czerny remarks that 50,000 persons die annually in Germany from cancer and there must be an average of 100,000 suffering from it all the time. He has had 2,500 in-patients and 1,000 out-patients at the cancer research institute at Heidelberg in his charge, and he has been successful in prolonging life and making it bearable in a surprisingly large number of advanced cases. He reiterates anew that the earlier and the more radically incipient cancer is removed the better the prospects for a permanent cure, and that this is the best means to rouse into action the protecting powers of the organism. He has never known of a spontaneous cure without some surgical or therapeutic help. But there are many cases in which the character of the growth renders prompt recurrence almost inevitable. In these and in the inoperable cases we now have a large number of palliative, curative measures, and he applies a number in turn, individualizing them for each case. He is convinced that progress in this line demands numerous cancer research institutions and he wishes that the money now spent on a single Dreadnaught might be diverted to this cause. For although the causal agent of cancer has not yet been discovered and although direct transmission plays no part in its development, yet all the results of modern research point to some external cause for the disease and suggest that this cause lurks in the

soil or the houses we inhabit or in the food we eat. He believes that isolation of cancer patients in special institutions would not only ameliorate the condition of the patients but would contribute to reduce the spread of malignant disease, just as the special sanatoriums and the general improvement in hygiene have contributed to the decline of tuberculosis and leprosy.

108. **Nervous Disease in Pregnant Women.**—Saenger recalls several cases of puerperal neuritis or polyneuritis which he has previously published; in all the neuritic process developed in the puerperium and there was no tendency to fever or suppuration; delivery had been normal. In two other cases epileptic seizures developed during the pregnancy or reappeared after years of latency. In two other cases a maniacal psychosis developed in the course of a pregnancy. In both of these as well as in the epileptic cases the women recovered after the pregnancy had been interrupted. Saenger consequently reiterates his conviction that many women would be saved from chronic mental disease if abortion were induced in time when the mental disease first develops in connection with a pregnancy.

110. **Quantitative Test for Albumin.**—Claudius protests against placing reliance on the Esbach test for albuminuria, his experience with it confirming the conflicting results obtained with it on repetitions of the tests. He then describes a technic which he has found simple and reliable. It is based on the fact that when the albumin dissolved in a fluid is precipitated, if there is a stain dissolved in the water which has an affinity for albumin, the latter, as it flakes out, carries with it some of the stain, so that the supernatant fluid is seen to be less highly colored on comparison of the filtrate with the original stain. He uses for the purpose a stain formed by combination of trichloracetic acid, tannic acid and fuchsin.

112. **Enucleation of the Tonsils with the Fingers.**—Borchers gives an illustrated description of the technic for loosening and then enucleating the tonsil, using the forefinger and thumb alone. He does the little operation under a few whiffs of ethyl chlorid. In a minute or two the tonsil can thus be shelled out. He does this before the reflexes have been lost, to prevent aspiration of blood. With this technic the dangers and drawbacks of ordinary tonsillectomy are avoided. There was very little hemorrhage in the thirty cases in which he has applied it. Direct visual inspection is not necessary as the fingers are guided by the sense of touch. The chief advantages of this technic are the absence of danger of injuring the arteries, and that ether or chloroform are not required. If the tonsil is found very soft or firmly adherent to the adjacent parts this method will have to be abandoned and the operation completed with instruments.

113. **Surgical Treatment of Tropical Dysentery.**—Müller reports from Hong Kong four cases in which he succeeded in curing severe dysentery by local treatment through the appendix.

114. **Effectual Treatment of Headache.**—Lorand says that relief like that from lumbar puncture in compression of the brain can be obtained in cases of severe headache by means to induce copious secretion in the nose. This amounts practically to a venesection only that serum alone escapes, and he expatiates on the remarkable benefit thus derived in migraine or severe headache from other causes. The close connection between the circulation of blood in the nose and in the brain is abundantly shown by the headaches with certain nasal affections, such as the unbearable headache that may follow tamponing of the nose after an operation. By stimulating profuse nasal secretion the blood is drawn from the vessels in the dura and pia. He has found an irritating snuff the best means to start the nasal secretion, and gives two prescriptions, naturally only for transient use to relieve the headache: Menthol. 0.5 gm.; acid. bor. 1 gm.; irid. florent. and sacch. lact. *aa* 2 gm. Or ℞.: Pulv. mayoranae; irid. florent. *aa* 1 gm.; sacch. lact. 2. gm.; rad. veratri alb. 0.14 gm. The prompt cure of the headache in his own person and in a number of patients by this means suggests that this derivation by way of the nose might prove useful in meningitis, brain tumors, choked disc, optic neuritis or even possibly in glaucoma or disease of the internal ear.

116. **Terrace-Balcony Flats.**—Sarason's suggestion to build houses in which each story recedes a few feet was mentioned in THE JOURNAL, 1909, liii, 495, and this system of fresh-air tenement houses was given a medal at the Tuberculosis Congress at Washington in 1908. He now suggests an improvement on the original design. The terrace left by the receding of each story is supplemented by a veranda about three feet deep. This does not detract from the light and air in the room while it adds materially to the convenience of the inmates. Each story thus has its open terrace and veranda, and young and old can thus live out of doors on their own premises and with a minimal loss of ground space. He presents arguments to show that buildings of this kind have many advantages over the single-cottage plan, and that their introduction would do much toward the eradication of tuberculosis, etc.

Wiener klinische Wochenschrift

October 10, XXV, No. 41, pp. 1513-1556

117 *Gastric and Duodenal Ulcer. E. Schütz.
118 Roentgenoscopy in Duodenal Disease. A. Baron and T. Barsony.
119 *Diagnostic Importance of Hypermotility of the Stomach with Duodenal Disease. F. Eisler and S. Kreuzfuchs.
120 Duodenal Secretion. (Kurze Erwägungen über die grobphysikalischen Eigenschaften des menschlichen Duodenal—Jejunal—Saftes.) M. Gross (New York).
121 *Reflex Movements on Turning the Head in Cerebral Disease. (Reflektorische Bewegungen bei Kopfwendung in zerebralen Affektionen.) S. Bondi.
122 *Occult Hemorrhage in Stools with Gastric Carcinoma. F. Bardachzi.

117. **Duodenal Ulcer.**—Schütz reviews a number of the newer diagnostic points which permit differentiation of a duodenal ulcer. They have demonstrated further that ulceration in the stomach and duodenum is more common than hitherto recognized, and that in many cases—possibly in the majority—a supposed gastric neurosis was in fact merely the manifestation of an unsuspected ulcer. He urges tests for a gastric ulcer in every case of persisting and rebellious pain in the stomach which does not yield to diet. Even if the findings are negative, the possibility of an underlying ulcer should be borne in mind as it is far better for the patient to be credited with an ulcer when none exists, than to have one overlooked. Among the points useful in differentiating are a history of local trauma, the high total acidity of the unfiltered gastric content, a tumor without metastatic lumps, and pain regularly after eating solid food—these speak for gastric ulcer. With duodenal ulcer, the pains may subside for intervals of years or at certain seasons but their periodical appearance three or four hours after the meal and the way in which they spread to the right side, and the tender point to the right of the median line above the umbilicus, with reflex rigidity of the upper segment of the right rectus, and accelerated expulsion of the stomach content, are all characteristic. He does not regard operative treatment as inevitable for duodenal ulcer; he has had patients recover under internal measures alone, such as small frequent meals—even during the night—and the persisting use of alkalies, when all the clinical signs pointed to duodenal ulcer.

119. **Duodenal Hypermotility of the Stomach.**—Eisler gives the skiagrams of two cases out of a large number in which the motor functioning of the stomach was tested in its connection with disease of the biliary apparatus. One patient had the excessive motility of the stomach characteristic of duodenal trouble, with cachexia and jaundice; no tumor could be palpated and the urine and stool findings were negative, but the diagnosis was made on this alone—cancer of the pancreas involving the duodenum—and it was confirmed by necropsy. In another case a woman had had gastric disturbances for years, and in the last four months had become much emaciated and vomited frequently; in the right upper abdomen a tumor was palpated and roentgenoscopy showed the stomach displaced upward, of normal size, with hypermotility, the duodenum normal until near its lower third, where there seemed to be obstruction, and a tumor was palpated which could be moved with the duodenum. It proved to be a tumor of the pancreas involving the duodenum. He calls attention to the upward displacement of the right diaphragm and limitation of its excursions, a sign of the "duodenal excessive motility" of the stomach. In two cases examined the trouble was

traced to cholelithiasis secondarily impeding the functioning of the duodenum.

121. **Reflex Movements on Turning the Head in Brain Diseases.**—Bondi reports eight cases in which on passive turning of the head to one side a reflex drawing up of the leg followed. With hemiplegia sometimes there was merely dorsal flexion of the big toe, but as a rule the leg was flexed. The patients had meningeal symptoms and caries of the cervical vertebrae or cerebral syphilis or an abscess or hemorrhage in the brain. The reflex was elicited only when the head was turned to the affected side at first, but as the disease progressed both sides showed a tendency to the reflex movement. He found this sign useful in locating a circumscribed lesion in the brain in several cases.

122. **Occult Blood in the Stool with Gastric Cancer.**—Bardachzi obtained positive findings in all but four of fifty-eight patients with certain gastric cancer and in none of large numbers of healthy persons examined. He used the benzidin test applied to half a test-tubeful of the stool for the entire twenty-four hours, diluted.

Zeitschrift für Kinderheilkunde, Berlin

V, No. 2, pp. 85-174

123 Chemistry of Infant's Stomach. (Zur Chemismus des Säuglingsmagens.) L. Tobler. (Salzsäure im Säuglingsmagen.) B. Salge and H. Davidsohn.
124 Infantile Summer Mortality in Austria. (Die gleichmässige Verteilung der Sommersterblichkeit der Säuglinge auf Stadt und Land in Oesterreich.) L. Moll and E. Mayerhofer.
125 *Feeding of the Prematurely Born. (Zur Ernährungstechnik frühgeborener Säuglinge.) F. Rott.

125. **Feeding of the Prematurely Born.**—Rott has been feeding prematurely born infants through a No. 9 or 10 catheter, 15 cm. long, connected by a rubber tube with a glass funnel holding about 50 c.c. The catheter is introduced through the mouth along the median line into the esophagus and removed each time after the feeding is completed. The introduction of the catheter is simple and easy, especially on account of the lack of reflex action in the prematurely born. The child is fed in this way five or seven or even eight or ten times during the twenty-four hours. Eighteen incubator babies were fed through a catheter in this way, and he is convinced that many were tided by it past the danger point into safety, who otherwise would have succumbed. No by-effects or injury were noticed in any instance, and the case histories and weight curves given substantiate the great value of this simple and effectual means of supplying these infants with adequate nourishment. Three of the children had been born just before term and although they were several days old yet they were too weak to nurse. Under the catheter feeding they promptly gained in strength and weight.

Zentralblatt für Chirurgie, Leipsic

October 12, XXXIX, No. 41, pp. 1401-1432

126 Bandage for Prolapse of Rectum in Children. (Einfacher Verband zur Verhütung und Heilung des Mastdarmvorfalles der Kinder.) C. Vidakovich.
127 *Operation for Wandering Kidney. (Wanderniere.) K. Vogel.
128 Fracture of Shoulder Blade. (Zur typischen Fraktur des Schulterblattes—Preiser.) T. Kölliker.

127. **Wandering Kidney.**—Vogel hangs up the kidney by suspending it from the twelfth rib, cutting for the purpose a flap from the capsule which is passed over the rib and sutured to the kidney again, thus holding it and raising it as high as desired. He thinks this technic has many advantages over the methods of suspending the kidney by scar formation.

Zentralblatt für Gynäkologie, Leipsic

October 12, XXXVI, No. 41, pp. 1353-1384

129 *Roentgenoscopy in Obstetrics. (Zur geburtshilflichen Röntgendiagnose.) H. Eymer.
130 Pathogenic Importance of Non-Hemolyzing Streptococci. O. Bondy.

October 19, No. 42, pp. 1385-1416

131 *Hands Off the Uterus. ("Hand von der Gebärmutter.") F. Ahlfeld.
132 *Emptying the Breasts in Treatment of Eclampsia. (Abspritzen des Kolostrums bei Eklampsie.) G. Walcher, Jr.
133 *Importance of Epinephrin Treatment of Osteomalacia. (Nochmals bezüglich der Pathogenese und der Behandlung der Osteomalakie.) L. M. Bossi.
134 Contraction of Uterine Cervix Under Influence of Hypophysis Extract Interfering with Delivery. (Eine ungewöhnliche Wirkung des Hypophysenextraktes auf den gebärenden Uterus.) K. Heil.

129. **Roentgen Diagnosis in Obstetrics.**—Eymer expatiates on the value of roentgenoscopy to determine the shape of the pelvis and diameter of the outlet, the position of the fetus and whether there are twins or not. He gives the details in twenty-one cases to show the advantages of the measure. In some of the cases the roentgen examinations were made repeatedly during the course of the pregnancy.

131. **"Hands Off the Uterus."**—Ahlfeld thinks that the uterus is prevented from normal contraction after delivery if it is held from without or manipulated in any way, consequently he advises to leave it entirely alone unless one's hand is forced by excessive hemorrhage. After delivery of the child, the uterus and even the abdominal walls should be left unmolested for an hour or hour and a half if the danger of hemorrhage is not pressing.

132. **Emptying the Breasts in Treatment of Eclampsia.**—Walcher thinks that the connection between eclampsia and the mammary gland is not to be denied, and that it is an important indication to get rid of the toxins accumulated in the breasts. He consequently makes a practice of squeezing the colostrum out of the breasts, milking it out during or immediately after the convulsion, striving to empty the breast as completely as possible. In several of the eleven cases in which he has applied this measure a beneficial influence seemed beyond question. In others no improvement followed. It is certainly the simplest and easiest means to act on the mammary gland, and the benefit from this in veterinary medicine has long been established. It has been his experience that eclampsia developing or persisting after delivery is the gravest form; in a preceding series of thirty-four cases of this type, sixteen of the patients died.

133. **Epinephrin in Treatment of Osteomalacia.**—Bossi relates the particulars of an unusually instructive case of osteomalacia in a married woman of about 40. The osteomalacia had tormented her for thirteen years and proved rebellious to all kinds of treatment and care until a systematic course of injections of epinephrin was undertaken, under which she was entirely cured except for the deformity the disease had entailed. The case teaches the difficulty of differentiating osteomalacia, the trouble being generally ascribed to arthritis or rheumatism. The patient was sterile owing to curving of the uterine cervix and anteflexion. The first signs of the osteomalacia developed a few months after her marriage at the age of 26. The course of epinephrin included 150 injections in about nine months, 1 c.c. being the largest dose given of the 1 per thousand solution of epinephrin, and frequent pauses were made. Bossi's previous announcements of the importance of epinephrin treatment in osteomalacia were mentioned in THE JOURNAL, 1907, xlviii, 1386. He reviews the work of others along this line, and states that the epinephrin with proper technic never does harm in osteomalacia; the severer the case the greater the tolerance. His case suggests a connection between congestion and development of osteomalacia.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 8, XXXIII, No. 121, pp. 1265-1272

135 *Tendency to Tuberculous Hemoptysis Cured by Intravenous Injection of Ergot and Morphin; Thirteen Cases. C. Garmagnano.

October 10, No. 122, pp. 1273-1280

136 Inflammatory Tumors in Abdominal Wall After Herniotomy. C. Giacomo.

October 13, No. 123, pp. 1281-1296

137 Antiferment Treatment of Abscesses. (Cura degli ascessi con gli antifermenti.) L. Cocco.

135. **Ergot and Morphin in Treatment of Hemoptysis.**—Garmagnano found a single intravenous injection sufficient to arrest the tendency to hemoptysis in pulmonary tuberculosis, and relates the details of thirteen cases of the kind. With a low blood-pressure he injected the extract of ergot alone, but with a pressure above 110 mm. he injected both ergot and morphin. This arrests the cough and tranquillizes the patient, and the blood soon disappears from the sputum. He did not find that the injection modified the course of the disease; the patients all died soon after as only the far advanced cases are admitted to the hospital where he is intern.

Policlinico, Rome

October 13, XIX, No. 42, pp. 1517-1552

138 Double Fracture of the Clavicle. R. Carnelli.
139 Multiple Rupture of Intestines and Mesentery from Kick by a Horse. (Caso di rotture multiple dell'intestino e mesentere per calcio di cavallo.) M. Fransini.
140 *Heart-Block; Five Cases. (Sindrome di Morgagni-Stokes-Adams.) G. De Sanctis.
141 *Intravenous Injection of Phenol in Treatment of Sciatica. (Cura della ischialgia con speciale riguardo al metodo Baccelli.) U. Rosi.

October, Surgical Section No. 10, pp. 433-480

142 Malignant Teratoid Tumor in Testicle. F. Marcora.
143 Ureteral Grafts. (Omotrapianti ureterali.) A. Chiasserini.
144 Hypophysis Tumors. (Struma ipofisario iperplastico con acromegalia e tumori ipofisari.) N. Leotta. Commenced in No. 9.

140. **Adams-Stokes Syndrome.**—De Sanctis reports the details of five cases of heart block to illustrate the variety of the causes which may induce it. In two of the cases the trouble was evidently in the heart muscle while in the three others it was unmistakably the result of irritation of the vagus from some cause, reflex or directly toxic, or from a solitary tubercle in the medulla oblongata. The Vaquez test elicited a positive response in these three neurogenic cases while there was no response to it in the myogenic cases. The patients were men between 25 and 60 and one boy of 13, the latter having the solitary tubercle.

141. **Intravenous Injection of Phenol in Treatment of Sciatica.**—Rosi has applied in eleven cases Baccelli's method of intravenous injection of a very weak solution of carbolic acid in treatment of chronic sciatica. The sciatica was of several years' standing in some of the cases and had completely incapacitated the patient, but the sciatica was finally entirely cured by the injections, although from ten to sixty injections were required for the purpose. The patients were from 34 to 63 years old. [The strength of the solution is not mentioned, but Baccelli generally uses 1 per thousand or 1 per cent. solutions.]

Riforma Medica, Naples

October 5, XXVIII, No. 40, pp. 1093-1120

145 Heart Defect in Boy of 5. (Sopra un vizio di cuore in un bambino di cinque anni.) F. Luzzatti and B. Santangelo.
146 Recovery After Multiple Gunshot Injury of Chest and Abdomen, with Complications. (Nota clinica sulle ferite toraco-addominali.) O. Finzi.

October 12, No. 41, pp. 1121-1148

147 Much's Stain for Tubercle Bacilli. G. Constantini.
148 Hernia of the Ovary or Fallopian Tube. (Ernia annessiale.) U. G. Costa.

Semana Medica, Buenos Aires

September 19, XIX, No. 38, pp. 549-596

149 Heart on Right Side Plus Hernia of Diaphragm. E. D. Berenguer.
150 *Stab Wound of Lumbar Meninges. A. Rocco.
151 Physiology and Hygiene of the Mouth. (Apuntes de Odontologia.) P. Hidalgo.

150. **Stab Wound of the Lumbar Meninges.**—A boy of 11 fell on a knife in his belt and the knife pierced the meninges in the lumbosacral region. The fourth day cerebrospinal fluid began to dribble from the wound; probably some clot had blocked the hole in the meninges until this time. The boy was then placed in the ventral decubitus with the pelvis raised and the dribbling ceased at once. This position was maintained for over two weeks until the wound had entirely healed, leaving no trace of the injury.

Hygiea, Stockholm

September, LXXIV, No. 9, pp. 945-1056

152 Duration of Pregnancy. (Om den beräknade längden af det mänskliga hafvandeskapet och denna frågas betydelse för faderskapsbevisningen in foro.) A. Key-Aberg.
153 *Spirochetes in the Tonsils in Syphilis. (Tonsillerna som smittobärare vid syfilis.) H. I. Schlasberg.
154 Artificial Pneumothorax in Treatment of Gangrenous Cavity in Lung. C. Löwenhjelm.

153. **Spirochetes in Tonsils.**—Schlasberg found spirochetes in the tonsils of six out of fifty patients with syphilis of several months' standing and in all but ten of forty-two patients with recent syphilis. In some the tonsils were apparently sound, while some of the patients with sterile tonsils had specific lesions in the tonsils. He also examined the tonsils of twenty non-syphilitics but never found spirochetes in them. He never found them in the tonsils of patients who had taken three or more courses of specific treatment and whose infection dated from over eight months. His experience further demonstrated that when spirochetes are found in the tonsils during the first six months and local treatment is applied, in addition to the regular courses, the patient may be reasonably certain that there will be no secondary recurrence in the tonsils. The local treatment he found effectual was to paint the tonsils with a 2 per cent. alcoholic solution of mercuric chlorid once a week. In twenty-two of the recent cases this local treatment was applied and no lesions developed in the tonsils, while papules were found regularly on the tonsils after four or six weeks in the nine patients with spirochetes in the tonsils early but who were not given local treatment.

Nordiskt Medicinskt Arkiv, Stockholm

XLV, Surgical Section No. 2. Last indexed May 25, p. 1652

155 *Primary Tuberculosis of Mesenteric Lymph-Nodes from Surgical Standpoint. B. Floderus.

155. **Primary Tuberculosis of Mesenteric Lymph-Nodes.**—Floderus concludes from his research on the etiology, symptoms, diagnosis and prognosis of this condition that it is comparatively frequent. Primary tuberculosis of the mesentery is of far more frequent occurrence but has no importance from the surgical standpoint. He ascribes primary mesenteric tuberculosis to infection from cow's milk or butter or tuberculous sputum in about equal proportions. It is most common up to the age of 15, at which period it seems to reach its acme. Its development seems to be favored by acute infections in the connected segment of the bowel. Most of the clinical cases hitherto studied were diagnosed erroneously, the trouble being taken for a tumor, appendicitis, invagination or peritonitis. After a long stage of latency, pain is the first symptom, generally localized in the region of the umbilicus or cecum. The tumor is the most important objective finding. Vomiting, diarrhea and mucous stools are frequent but not characteristic. Jaundice may be induced by compression of the bile-duct by the swollen lymph-node. Fever is the rule in all cases of primary mesenteric tuberculosis. Suppuration of the lymphoma is probable if the fever is very high, although suppuration may continue long without fever. Other organs are rarely involved with primary mesenteric tuberculosis, but miliary tuberculosis is a frequent outcome. One or more of the swollen mesenteric lymph-nodes can generally be detected on palpation, especially by palpation through the rectum under general anesthesia. The tumor may become the size of a cocoanut by agglomeration of several lymph-nodes. The consistency is usually firm and elastic, tenderness is not always present. Radioscopy is a great aid in the diagnosis. Only fifty cases are on record in which operative treatment was applied, but Floderus adds twelve to the list. Connected segments of the intestines were removed with the lymphomas in twelve cases. The interval between the first symptoms and the operation was generally less than a month. The lymphoma is best enucleated close to the capsule, suturing with catgut the incised mesenteric serosa afterward and not draining. The bursting of a tuberculous pus pocket or tearing of an adherent loop of intestine are the chief dangers to be feared, but the postoperative reaction is surprisingly slight. In nine of the total cases the patients succumbed to hemorrhage, peritonitis, sepsis or miliary tuberculosis, and in three of these cases the operation might be incriminated in the fatal outcome. The results of operative treatment have been excellent as a rule; recurrence is exceptional. Enucleation of all the swollen lymph-nodes should be the aim. In case of extensive and inaccessible suppuration it may be better to restrict the operation to clearing out the pus pocket, without attempting to excise it entirely. As operative treatment in the early stages gives such excellent results and fatalities occur only in the old advanced cases, the operation should not be deferred when the diagnosis is once certain and the tumor is large, or there is persisting or recurring fever, abdominal pains or other intestinal disturbances. Whenever a stationary condition shows signs of exacerbation, the necessity for an operation should be considered anew. Pulmonary tuberculosis in an early stage should not be regarded as a contra-indication for operating for primary tuberculosis of the mesenteric lymph-nodes. Those generally affected are the ones connected with the ileum or ileocecum, more rarely those nearer the stomach or rectum. The swollen lymph-nodes may compress or become adherent to adjacent vital organs.